The Mining Journal

RAILWAY AND COMMERCIAL GAZETTE.

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

No. 696.—Vol. XVIII. LONDON, SATURDAY, DECEMBER 23, 1848. [Price 6d.

Stannaries of Cornwall—In the Vice-Warden's Court.

PURSUANT to a DECREE of the VICE-WARDEN'S COURT, made in the cause of BICKFORD and OTHERS v. RICHARDS, the CREDITORS, in respect of TRENOW CONSOLS MINE, in the parish of PERRANUTHNOE, within the said Stannaries, are, on or before the 4th day of January next, to come in and PROVE their DEBTS before the Registrar of the said Court, at his office, in Truro, or, in default thereof, they will be excluded the benefit of the said decree. 1

Dated Registrar's Office, Truro, Dec. 20, 1848.

VALUABLE MINE PROPERTY TO BE SOLD, BY TENDER—GREAT MICHELL CONSOLS MINE AND MATERIALS,

COMPRISING

1	9-feet 12-inch pump		Block and tackle ropes
1	7-feet 10-inch ditto		Chains and bevels
1	9-feet 10-inch ditto		Triangles and windlasses
19	9-feet 9-inch ditto		Whim and other kibbies
2	6-feet 9-inch ditto		Candle and other chests
1	4½-feet 9-inch ditto		Screw stocks, taps, and plates
7	9-feet 8-inch ditto		Dressing tools and underground barrows
1	10-feet 7-inch ditto		Grease and nails
1	3-feet 8-inch ditto		Ladders, about 50 fathoms
1	10-feet 7-inch windbore	3	Beams, scales, and stand
1	10-feet 8-inch ditto		Bell and stand
1	6-feet 7-inch doorpiece and door		Bucket prongs and brasses
3	6-feet 8-inch ditto		Grindstone and stand
1	7-feet 7-inch working barrel		Castings of angle-bob, with saddles and brasses
1	10-feet 7-inch ditto		Clack seatings
1	9-feet 8-inch ditto	2	Large pulleys, and 1 whim ditto
1	10-feet 8½-inch ditto		Shaft tackle, with pulleys
1	7-inch plunger bottom, with pole, stuffing-box, and gland		Miner's dial, with quadrant attached
	8-arm capstan, with oak axle, shears, pulleys, and brasses		Office furniture
70	Fms. 10-inch capstan-rope, nearly new	1	Large and 1 small pair of blocks
	Sundry lots of timber, plank, air-machines and pipes		Old cast-iron Brass
	Sundry iron, new and old		Old wrought-iron
	43-inch smith's bellows, nearly new		Pair of connection cane and brass
	38-inch ditto		Miners' tools
	Underground iron and wood-rods		Smiths' trough
	Horse-whim, and part of 1 old ditto		Large cistern
	Whim-rope		Knocker, line, and stand
	Smiths' tools		Plane, augers, gimblets, hatchets, & saw
	Steel, anvil, and vice		Sump-house grates
			Oil White lead
		2	Wood matchings

Also, a very powerful WATER-WHEEL, 45-feet diameter, 5-feet breast.
About 155 fathoms of 2½ horizontal-rods—complete.
One main-bob at shaft, and two other bobs; hanging and other shaft-rods.
Rod pulleys, with saddles and brasses.

The above Materials are in good condition, having been used only about Three Years.

This very valuable SETT is situated about 7 miles from Bodmin, and 4 from Camelford, in the parish of SAINT BREWARD, county of CORNWALL, in lands of Sir H. Onslow, at 1-15th dues, for 21 years, about 19 of which are unexpired, and is now offered FOR SALE, together (in one lot) with the MATERIALS. There are three lots in the sett, and but partial trial to one given. The Great South Lode, which is in places upwards of 10 feet wide, containing an abundance of splendid gossan, mundic, copper ore, spar, and fluor, on which an engine-shaft has been sunk to a depth of 35 fms. below the surface, where several fathoms of ore ground have been laid open, and a winze put down 10 fms. below, and about 10 fms. driven on the course of the lode; the indications here are such as to warrant that, with a very moderate capital, this is to be made a very rich and valuable concern. The geological features throughout the sett are of a highly important character—the principal workings eastward being in granite, while those to the west are in clay-slate (or killas).

Five cross-courses have been met with, which are all at times considered good conductors for copper ores. With the exception of a few shoad pits, and a few fathoms of very shallow adits and openings, the drivages altogether on the course of the lode will not amount to more than about 130 fathoms, and returns have been already made from this very limited extent of exploration to about £600 worth of copper ore.

The local advantages are without parallel in this county—this very extensive sett being about 1½ mile in length on the course of the lodes, with never-failing streams of water running throughout, available for machinery to any extent, so that the cost of steam-power will not, *at any time*, be required.

The Wade Bridge Railway is within 2 miles of the mine, so that every facility is to be had for the export of ores and import of materials. The buildings on the mine consist of spacious smiths' and carpenters' shops, with other necessary offices.

Sealed tenders to be forwarded to G. Kieckhoefer, Esq., 50, Threadneedle-street, London; or to Capt. T. Richards, on the mine, on or before the 10th January, 1849.

TO BE SOLD, OR LET ON ROYALTY, the DARLASTON GREEN COLLIERY AND IRONSTONE MINES,

In the district of SOUTH STAFFORDSHIRE, now working by the "Galvanised Iron Company." 3

These MINES comprise about 26 acres, held under lease, of which about 23 years are unexpired. They contain all the measures of IRONSTONE usually found in that locality—the excellence of the quality of which is well known, and a small portion of the New Mine Coal, the greater portion of which has been worked. The mines have recently been opened, and drained at a considerable expense, and are now in complete working order. There are a sufficient number of shafts sunk on the estate to get the whole of the mines; and a very trifling outlay will open the measures of ironstone which are not now at work.

The PUMPING and WINDING-ENGINES are perfectly EFFECTIVE, and all the PLANT in EXCELLENT REPAIR. The Birmingham Canal runs into the estate, and there is abundant demand for the produce of these mines at the surrounding iron-works.

For further particulars, apply at the office of the Galvanised Iron Company, 3, Mansion-house-place, London; or to Mr. Taylor, King Hill-field, Darlaston.

TO BE SOLD, OR LET ON LEASE (FREEHOLD), the PHŒNIX IRON-WORKS, WEST BROMWICH,

In the district of SOUTH STAFFORDSHIRE, at present carried on by the "Galvanised Iron Company." 4

These WORKS, which are amongst the most eligible and complete in the district, comprise the following MILLS and FORGES—viz.:

1. An ENGINE, of 100-horse power, by Boulton and Watt, in brick engine-house, with two 35-feet boilers, and all the requisite machinery, of the best description, recently erected, driving a forge; a 20-inch BOILER-PLATE TRAIN, and a RAIL MILL—appended to which is a small ENGINE, of 10-horse power, with two PUNCHING and STRAIGHTENING MACHINES for RAILS—complete.

2. An ENGINE, of 60-horse power, by J. and G. Davis, in brick engine-house, with three 25-feet boilers, with powerful machinery, driving a forge; an 18-inch BOILER-PLATE and SHEET MILL; and a 16-inch TRAIN, for the manufacture of Bars, T Iron, and Angle Iron. Attached to this work, is an ENGINE, of 20-horse power, on cast-iron frame, driving a small 8-inch MERCHANT TRAIN, SAW, and TURNING-LATHE.

With these Mills and Forges are 34 PUDDLING and HEATING FURNACES—the whole standing on about two acres of freehold land, bounded by the main road on one side, and by the Birmingham Canal on the other, on which are the necessary wharfages for the use of the works.

The capacity of the works is equal to about 350 to 400 tons of finished iron weekly.

Adjoining the works, on a separate tenure, are a MANAGER'S HOUSE, with about FIVE ACRES of LAND, and FOUR WORKMEN'S HOUSES.

There is an extensive assortment of ROLLS, for the manufacture of the various descriptions of iron for which these works have been long known, and for which there is an extensive and established connection—the whole forming a most complete and valuable establishment for the supply of manufactured iron in all its branches.

For further particulars, apply either at the offices of the Galvanised Iron Company, 3, Mansion-house-place, London; or to Mr. Spencer, on the premises.

EXTENSIVE AND VALUABLE MINERAL PROPERTY AND IRON-WORKS FOR SALE.—TO BE SOLD, BY PRIVATE CONTRACT, THE VENALLT COAL AND IRON-WORKS, 5

Situate on the south side of the RIVER NEATH, GLAMORGANSHIRE, about 8 miles from the port of Neath, and 14 from the port of Swansea, with all the necessary appendages for carrying on the smelting of iron, and an extensive shipping trade of stone coal and stone coal culm.

The property comprises long leases of coal and ironstone, extending over about 3000 acres of land, in a ring fence, which are taken on favourable terms. The coal is anthracite, and three veins, of an aggregate thickness of about 25 feet, are effectually opened by level, for the supply of 100 to 200 tons per day.

The ironstone veins are abundant and rich, and sufficiently opened by level to yield an ample supply for three furnaces. There is also valuable black-band, extending over a large acreage.

The works consist of an engine-house for a pair of engines, one 50-horse high-pressure blowing engine, two blast-furnaces, with all the necessary hot-blast stoves, casting-houses, foundry, finery, &c.

The works and colliery are in operation, and any person who may be desirous of purchasing, will be treated with on liberal terms.

Reports recently made on the property, by Messrs. John Southan, of Bilston, and W. P. Struvé, of Swansea, may be seen, on application to Messrs. Jevons and Wood, Neath; Messrs. Llewellyn and Randall, solicitors, Neath; or to Messrs. Rowland, Hacon, and Rowland, solicitors, 38, Threadneedle-street, London.

STEAM-ENGINES.—From 8 to 20-horse power ENGINES ALWAYS IN STOCK.

Apply to Mr. CAPPER, Engine-Maker and Founder, BIRMINGHAM. 6

Price—£12 to £16; with boiler, £22 per horse.

CWMBRAIN PATENT IRON REFINERY.—The PROPRIETORS of IRON FORGES and MILLS are respectfully INVITED to MAKE TRIAL of Mr. BLEWITT'S REFINED IRON, or METAL, PREPARED by a NEW PATENT PROCESS,

whereby the IRON is completely FREED from the IMPURITIES CONTRACTED in the BLAST-FURNACE, and, by judicious mixtures, rendered applicable to every kind of manufacture. Heretofore, the metal usually sold in the market has been produced from the worst pigs, scraps, and refuse of some particular blast-furnace, or set of furnaces, without any mixture, or any regard to quality, or the purpose for which it might be required. The PATENT METAL is PREPARED ON SYSTEM, and TO ORDER, for any of the following purposes:—

1. For BOILER and TANK-PLATES.
2. For TIN-PLATES, commonly called COKE-PLATES. 7
3. For STRONG CABLE BOLTS, RIVET, and ANGLE IRON.
4. This COMPOUND PUDDLED, beat under the hammer into a bloom, reheated, and rolled into a 6 or 6½-inch bar, makes TOPS and BOTTOMS for FLANCH and OTHER RAILS, of very superior quality, and attended with less waste than any other kind of iron used for that purpose. It is also well adapted for nail-rods, horse-shoes, and for other ordinary uses of the blacksmith.

The PATENT METAL is marked with a squirrel, and the initials "R. J. B.," and is to be had only at the "Cwmbrain Iron-Works," near Newport, Monmouthshire.

THE GENERAL TELEGRAPH COMPANY will APPOINT AGENTS in all the PRINCIPAL TOWNS in ENGLAND, SCOTLAND, and IRELAND.—Applications, accompanied by references to one or more respectable householders in London, to be made to the secretary, 9, John-street, Adelphi, London. 8

RIDER'S RAILWAY BRIDGE.—TO RAILWAY COMPANIES.—This BRIDGE has now been for 18 months in DAILY USE (having a double track) on the HARLEM RAILWAY, in the State of New York, United States. The Erie Railway and the Newhaven Railway Companies have likewise adopted it. 9

Several other bridges, for ordinary purposes, are also being constructed.

The advantages of this over all other iron bridges hitherto invented, consist in the small amount of iron required, compared with the strength obtained, in avoiding the use of any surplus weight of material, in the consequent economy of its construction, and also from its lightness, easy mode of putting together, and facility of transport, in its peculiar adaptation for foreign use.

As regards economy, it can be erected at a cost not exceeding that of a WOODEN BRIDGE, of equal capability.

Applications to be made to Mr. Moulton, the patentee, Bradford, Wilts.

LOCOMOTIVE STEAM-CARRIAGE COMPANY, FOR PASSENGERS AND PARCELS ON TURNPIKE ROADS. 10

PRELIMINARY MEASURES having been TAKEN for CARRYING OUT the above object, all communications are requested to be addressed to Mr. Henry English, Hon. Sec., at the office of the *Mining Journal, Railway and Commercial Gazette*, 26, Fleet-street; or to Mr. F. Herbert, solicitor, 8, Heathcote-street, Mecklenburgh-square.

LOCOMOTIVE STEAM-CARRIAGE COMPANY, FOR PASSENGERS AND PARCELS ON TURNPIKE ROADS. 11

At a preliminary Meeting, held at the offices of the *Mining Journal, Railway and Commercial Gazette*, 26, Fleet-street, it was resolved,—

That a company be formed, with a capital of £200,000, divided into 20,000 shares, of £10 each.

That, in the first instance, the call be limited to 1s. per share, as required by the Joint-Stock Companies' Registration Act, and that the subscribers be not held responsible beyond the payment of such sum, which, it is assumed, will be amply sufficient for the purpose of obtaining the most conclusive evidence of the practicability of adopting steam carriages on common roads.

That no shareholder be called upon to pay any sum whatever until a general meeting be held, when the views and reports of the projectors will be laid before the meeting, and when they will have the opportunity of withdrawing from the company, or paying the instalment, as before provided.

A provisional committee is appointed, who will convene a meeting of the shareholders on the whole of the shares being subscribed for, when the call of 1s. per share will be required.

No expenses will be incurred beyond those absolutely necessary for determining the practicability of the object, and every information will be afforded on application at the offices of the honorary secretary.

Application for shares, on the above terms—no sum being required until the whole of the shares are subscribed for, and then only 1s. per share, with an undertaking that no further liability is incurred without the assent of the subscribing party—to be addressed to the honorary secretary, Mr. H. English; or to the solicitor, Mr. F. Herbert.

One-third of the shares being already subscribed for, no applications can be received after Saturday, the 30th inst.

H. ENGLISH, Hon. Secretary.
F. HERBERT, Solicitor.

Offices, 25, Fleet-street, Dec. 21, 1848.

KENT AND SUSSEX

INDURATED AND IMPERVIOUS STONE COMPANY. [LICENSED UNDER HUTCHISON'S PATENTS.]

Capital—£20,000, in 2000 shares, of £10 each. 12

[*Provisionally Registered, pursuant to the Act 7 and 8 Victoria, cap.* 110.]

First call £2 10s. per share, on complete registration.—No further call to exceed £2 per share at one time, with three months' previous notice.

ONLY ONE-HALF THE CAPITAL WILL BE REQUIRED FOR FIRST YEAR'S OPERATIONS.

Application for shares (by letter) to be addressed to Mr. William Hutchison, Tunbridge Wells; or to Messrs. Hutchison, Willford, and Co., East Temple Chambers, 2, Whitefriars-street, Fleet-street, London, where specimens and particulars may be inspected; also, at the patentee's works, Calverley Quarry, Tunbridge Wells, Kent.

STEAM TO INDIA AND CHINA, VIA EGYPT.—Regular MONTHLY MAIL (steam conveyance) for PASSENGERS and LIGHT GOODS to CEYLON, MADRAS, CALCUTTA, PENANG, SINGAPORE, and HONG-KONG.

THE PENINSULAR AND ORIENTAL STEAM NAVIGATION COMPANY 13 BOOK PASSENGERS and RECEIVE GOODS and PARCELS for the ABOVE PORTS by their steamers—starting from Southampton on the 20th of every month; and from Suez on or about the 10th of the month.

BOMBAY.—Passengers for Bombay can proceed by this company's steamers of the 29th of the month, to Malta, thence to Alexandria by her Majesty's steamers, and from Suez by the Honourable East India Company's steamers.

MEDITERRANEAN.—MALTA—On the 20th and 29th of every month. CONSTANTINOPLE—On the 29th of the month. ALEXANDRIA—On the 20th of the month.

SPAIN AND PORTUGAL.—Vigo, Oporto, Lisbon, Cadiz, and Gibraltar, on the 7th, 17th, and 27th of the month.

For plans of the vessels, rates of passage-money, and to secure passages, and ship cargo apply at the company's offices, No. 122, Leadenhall-street, London; and 57, High-street Southampton.

NOTICE TO SHIPPERS OF GOODS AND PARCELS, per PENINSULAR AND ORIENTAL STEAM NAVIGATION COMPANY'S STEAMERS, to INDIA and CHINA.—GOODS and PARCELS sent direct to the company's parcel office, on or before 6 P.M., on the 17th of each month, are forwarded at less cost to shippers than when sent through any intermediate channel. Cases must not exceed 112 lbs. weight each, for Aden, Ceylon, Madras, Calcutta, and China; and 40 lbs. each case for Bombay. No package for India or China can, under any circumstances, be shipped at Southampton, unless it be cleared through the Custom-house, and placed alongside the steamer by noon on the 19th of each month. 14

Detailed particulars can be obtained on personal application, or by writing.
Parcel Department, 122, Leadenhall-street.

FOURDRINIER'S PATENT SAFETY APPARATUS, for PREVENTING ACCIDENTS IN MINES AND OTHER PLACES, WHEN THE ROPE OR CHAIN BREAKS.

By the ADOPTION of this INVENTION the LIVES of the WORKING MINERS may be PRESERVED, and the PROPERTY of the MINE OWNERS PROTECTED from the serious consequences of either of the following accidents—viz.: 15

1. From the man, or the load, being precipitated to the bottom of the shaft when the rope or chain breaks: in this case the apparatus is *self-acting*.
2. From either the man, or load, being drawn over the pulley: in this case, also, the apparatus is *self-acting*.
3. From the fearful consequences to men or load of a "whirl," or run: in this case the result is equally *certain*.

A COAL PIT, with the SAFETY APPARATUS ATTACHED to the CAGE, is daily at WORK near BURSLEM, in the STAFFORDSHIRE POTTERIES.

To inspect the apparatus, or to obtain any further information, application may be made o Mr. Edward N. Fourdrinier (the patentee), Cheddleton, near Leek, Staffordshire; or to Mr. Joseph Fourdrinier, 9, College-place, Camden Town, London—who are prepared to GRANT LICENSES for the USE of the PATENT.

PATENT IMPROVEMENTS IN CHRONOMETERS, WATCHES AND CLOCKS.—E. J. DENT, 82, Strand, and 33, Cockspur-street, watch and clock maker, BY APPOINTMENT, to the Queen and his Royal Highness Prince Albert, begs to acquaint the public, that the manufacture of his chronometers, watches, and clocks, is secured by three separate patents, respectively granted in 1836, 1840, 1842. Silver lever watches, jewelled in four holes, 6 gs. each; in gold cases, from £8 to £10 extra. Gold horizontal watches, with gold dials, from 8 gs. to 12 gs. each. 16

DENT'S PATENT DIPLIEDOSCOPE,

or Meridian Instrument, is now ready for delivery.—Pamphlets containing a description and directions for its use 1s. each, but to customers gratis.

TIN MINE FOR SALE.—TWO FIFTHS of a small TIN MINE, now at work, with STEAM-ENGINE, &c., in Cornwall—on advantageous terms, and with facilities for the payment of the purchase-money: amount, £1600. Apply for particulars to Messrs. Godden, solicitor, John-st., Gray's Inn-lane, Bedford-row. 17

TO COLLIERY OWNERS.—A GENTLEMAN, of 25 years' experience in the active management of a colliery, is OPEN to AN ENGAGEMENT. He is thoroughly acquainted with engine-making, shaft-sinking, pump-work, and coal-getting, and can bring very high testimonials of his sound practical skill as a mining engineer: salary moderate.—Apply to "Z.," care of E. W. Binney, solicitor, Manchester. 18

TO AMATEUR TURNERS AND OTHERS.—TO BE DISPOSED OF, a 5-inch LATHE, on an improved principle; also, a highly finished WORKING MODEL ENGINE, to drive the above, if required.—Apply (by letter pre-paid) to "R. P.," 24, Charles-street, Commercial-road, Stepney. 19

TO BE SOLD, a PUMPING-ENGINE, 30-inch cylinder, 9 ft. stroke, built by Mr. West, engineer, nearly new—only been worked about three years—no engine ever done better duty when at work: together with a SEVEN-TON BOILER, SPRING BEAM, and first set of rod-shaft attached, for £400. The engine is within a few miles of a good shipping port, being near Liskeard—one good road.—For particulars apply to Capt. Osburn, Liskeard; or Mr. Wm. Rendle, Octagon, Plymouth. 20

STEAM-ENGINE.—WANTED, a 70 or 80-horse PUMPING ENGINE, with 10 yards of 16-inch pumps.—Apply to Mr. Capper, engineer, Birmingham. 21

STEAM-ENGINE FOR SALE.—TO BE SOLD, a 12-horse power HIGH-PRESSURE STEAM-ENGINE, with or without boiler, quite new.

Also, a CORNISH BOILER, between 8 and 9 tons, quite new.

A WATER-WHEEL, 36-feet diameter, 4-feet breast, with wrought axle, cast-iron sockets, plumber blocks and brasses, nearly new. 22

Also, other SECOND-HAND MINING MATERIALS.

Apply to J. E. MARE, Plymouth Foundry.

STEAM-ENGINE INDICATORS.—Mr. W. K. WHYTEHEAD, C.E., begs to inform the Engineering Profession, that he has a STOCK of STEAM-ENGINE INDICATORS, of the best construction, ON SALE.

Also, McNAUGHT'S IMPROVED APPARATUS for TESTING the LUBRICATING VALUES OF OILS.—London Office, 3, Sherborne-lane, City. 23

Agent for McNaught's Patent Double Cylinder Engine.

MINING OFFICES, THREE KING'S COURT, LOMBARD STREET, LONDON.—Messrs. R. TREDINNICK & CO. beg to draw the attention of capitalists to the DEPRESSED MARKET VALUE of SHARES in ENGLISH and FOREIGN MINES, many of which pay dividends of from 20 to 30 per cent. per annum, whilst those on the eve of so doing are selling at corresponding low prices.—Messrs. T. & Co. continue to DEAL in every description of MINING, RAILWAY, BANKING, INSURANCE, CANAL, and OTHER SHARES.—Statistical information afforded gratuitously upon personal application.—MONEY ADVANCED upon the above securities. 24

MR. THOS. P. THOMAS, MINING AGENT, AND DEALER IN RAILWAY, GAS, BANK, INSURANCE, AND OTHER SHARES. 3, *GEORGE-YARD, LOMBARD-STREET, LONDON.* 25

T. P. THOMAS is a SELLER of SHARES in the leading MINES of Cornwall, Devon, and Wales—paying from 10 to 30 per cent.—Statistical information afforded upon personal application, or by letter.

MR. JAMES STRIDE, MINING, SHARE, AND GENERAL AGENT, 27, SPRING-GARDENS, LONDON, has FOR SALE, SHARES in the BEST DIVIDEND-PAYING and OTHER MINES. 26

MR. GEORGE BATE, JUN., CIVIL ENGINEER AND SURVEYOR, *WOLVERHAMPTON.*

Offices in Queen-street, corner of Piper's-row.

N.B.—UNDERGROUND MINING SURVEYS accurately executed. 27

JAMES LANE, MINING SHARE DEALER, 80, *OLD BROAD-STREET, LONDON.* 28

MONEY.—MESSRS. KILLICK & CO. (late WINSTANLEY, KILLICK, & Co.), SHAREBROKERS, inform their friends and the public, they make IMMEDIATE ADVANCES, to any amount, on the deposit of English and Foreign Railway Shares, Scrip, and Debentures, upon exceedingly advantageous terms: they also BUY and SELL every description of STOCK and MINING SHARES, at much less commission than usually charged.—6, Bank Chambers, opposite Bank of England. 29

AUSTRALIAN MINING COMPANY, 1, Adelaide-place, Dec. 18, 1848.—The board of directors hereby give Notice, that they have made a CALL of TEN SHILLINGS per share on the REGISTERED SHARES in the company, to be PAID on or before the 10th day of January, 1849, to the company's bankers, Messrs. Masterman, Peters, and Co., Nicholas-lane, Lombard-street, London. Interest, at the rate of 5 per cent. per annum, will be charged on all calls not paid on or before the 10th day of January. The call letter must be presented at the bankers at the time of payment.

N.B.—The transfer books of the company will be closed from Wednesday, the 27th Dec., until Wednesday, the 17th January, 1849. By order of the board, 30

J. A. JOSEPH, Secretary.

BEDFORD UNITED MINES.—DECLARATION OF DIVIDEND.—Notice is hereby given, that a DIVIDEND of FIVE SHILLINGS per share on the shares of these mines, will be PAYABLE at this office on Friday, the 22d December inst., and every succeeding Friday, between the hours of Eleven and Three o'clock, to such shareholders as shall give notice to the secretary personally, or by letter, of their intended application, two clear days before either of the above-named days of payment. By order of the meeting of shareholders, held this day, 31

5, Threadneedle-street, Dec. 14, 1848. G. KIECKHOEFER, Secretary.

MENDIP HILLS MINES COMPANY.—*December* 22, 1848.

At a Special General Meeting of the shareholders in this company, held this day, the following resolutions were passed:— 32

E. H. BARWELL, Esq., in the chair.

Resolved,—That this meeting approves of the agreement entered into between the directors and Mr. Thomas Somers, now read and submitted to the shareholders, for taking a lease of the Ubley Warren Slags, and certain slag ground adjoining, or near to it, and do accordingly sanction such agreement, and authorise the committee of directors to accept a lease from Mr. Thomas Somers in conformity therewith.—Carried unanimously.

Resolved,—That the thanks of the shareholders be presented to the chairman for his courteous conduct and lucid information, as also to the directors for their able management of the property of this company.—Carried unanimously.

NATIONAL BRAZILIAN MINING ASSOCIATION.—In pursuance of the resolutions unanimously voted at the public meeting of shareholders, on the 28th August last, the LATEST period for PAYMENT of INSTALMENTS on UNMARKED SHARES will be SATURDAY, the 30th inst.; on and before which day payments will be received at the Commercial Bank of London, Lothbury, but no money will be received as instalments on shares of any description of this association after that day. By order of the board, JOHN KEMPSTON, Jun., Sec. 33

26, Throgmorton-street, Dec. 18, 1848.

RUNNAFORD COOMBE MINE, BUCKFASTLEIGH, DEVON.—Mr. BROUGHTON is commissioned TO SELL a FEW SHARES in the above valuable MINE, at £4 per share, being much less than half their value. The above shares are offered to the public at this low price, in consequence of the holders being compelled to part with them. The mine is in full work, and raising more tin than the stamps can crush. A return is fully expected of £400 or £500, at the next January meeting.—Apply to Mr. B., 30, Taylor's-buildings, Woolwich. 34

ROYAL SANTIAGO MINING COMPANY.—The directors hereby give Notice, that the HALF-YEARLY GENERAL MEETING of the shareholders will be HELD at the office of the company on Wednesday, the 3d of January next, at One o'clock precisely, when the directors will make their report. 35

38, Broad-street-buildings, Dec. 16, 1848.

TINCROFT MINING COMPANY.—Notice is hereby given, that a GENERAL MEETING of the shareholders in the above company will be HELD at this office on Friday, the 19th day of January next, at One o'clock precisely. 36

44, Finsbury-square, London, Dec. 21, 1848.

ANDREW SMITH'S PATENT WIRE ROPE—NOTICE AND CAUTION.—The UNDERSIGNED begs to inform the Public, and especially the MINING, RAILWAY, and SHIPPING INTEREST, that he has become SOLE LICENSEE of Mr. ANDREW SMITH, for the MANUFACTURE and SALE of his PATENT WIRE ROPE; and that he has taken to the premises, late Mr. Smith's, at Millwall, Poplar, where orders will be executed with the utmost attention and dispatch, and on reasonable terms. WILLIAM WILKINS, 37

Patent Wire Rope Works, Millwall, Poplar, Nov., 1848.

CAUTION.—Persons PURCHASING, or USING, the PATENT WIRE ROPES, NOT MANUFACTURED by the above LICENSEE, are warned that they will be liable to be sued for damages as infringers of Mr. Smith's Patent.

Law Intelligence.

COURT OF EXCHEQUER—DECEMBER 19.

THOMPSON AND FORMAN *v.* BAILEY AND OTHERS.—In this case the Plaintiffs were Alderman Thompson and his partner, and the defendants were iron-manufacturers, carring on business at Liverpool and in Wales. The action was brought to recover damages for an alleged breach of contract, arising under the following circumstances:—On the 20th of April, 1847, the defendants bought of the plaintiffs 2000 tons of iron rails, through Mr. Mahony, who acted as broker for both parties, and signed a bought note in these words:—

"London, April 20, 1847.

"Bought on account of Messrs. Bailey Brothers and Co., 2000 tons of good merchantable iron rails of double-headed action, to weigh not less than 70 lbs. nor more than 82 lbs. per yard, at 8*l.* 17*s.* 6*d.* per ton, delivered free on board in Wales. A template of the rails to be handed within a week from this date, and delivery at the rate of 500 to 1000 tons per month (in seller's option), to commence next month."

On the 26th April the defendants sent a sketch on paper of the shape and size of the rail they required for 1000 tons. On the 4th May the plaintiffs wrote for the template, and said they were preparing the rollers for the rails. On the 5th May the defendants wrote, promising to send it in a few days; and on the 9th they sent a piece of rail, and required the weight not to be less than 72 lbs. per yard. On the 15th May the plaintiffs wrote, enclosing an invoice and delivery order and certificate of 787 tons. The defendants suspecting that these rails could not have been made for them, wrote to the plaintiffs on the subject, who replied, admitting that they had been made by the Messrs. Crawshays. The defendants, on inspecting the rails, found that they weighed only 71½ lbs. per yard, and must have been manufactured upwards of a twelvemonth, and refused to take them. On examining the rails more particularly, it was found that 500 tons of them were of the weight of 72 lbs. per yard; the plaintiffs thereupon tendered these 500, and also got 500 tons more from another manufacturer, of the required weight and shape, and tendered them. The defendants refused to take either, and also refused to send a template, the plaintiffs having offered to manufacture the remaining 1000 tons, treating the contract as at an end, in consequence of the plaintiffs not sending 500 tons of their own manufacture within the first month. After some correspondence, the present action was commenced for the price of the 1000 rails tendered, and for the loss of the profit which the plaintiffs would have made by the manufacture of the remaining 1000 rails according to the contract. There were 28 pleas, raising, of course, every conceivable defence.

For the plaintiffs it was contended to day, that by the contract they were not bound to manufacture the rails themselves; that they fulfilled the contract by supplying the rails of the weight and shape therein specified; that the fact of the defendants, subsequently to the execution of the contract, having desired that the rails should be of the weight of 72 lbs. per yard, and of the plaintiffs endeavouring, as much as they conveniently could, to comply with that wish, could not alter the contract; and that the rails tendered being within the range from 70 to 82, the contract was so far complied with; and moreover, that even if it were part of the contract that they should be of the weight of 72 lbs. per yard, the making them 71½ lbs. was as near a compliance as could be expected, it being impossible to make rails within a range of a pound in a yard. Several witnesses corroborated these latter positions. There was no question but that the rails were perfectly good merchantable rails.

For the defendants it was contended, that by the contract the plaintiffs should have supplied rails of their own manufacture, and that not having done so within the first month, the defendants were at liberty to repudiate the contract altogether. Several witnesses also were examined, who proved that rails ready made and lying on hand, though they were not absolutely the worse for it, were less an article of merchandise, and fetched generally something about 1*l.* a ton less than rails made to order; and one great ironmaster swore that he would have no difficulty in making 1000 tons of rails within a pound per yard of the weight required. The defendants had entered into a contract to supply the Great Northern Railroad, but there was no evidence of that company or any other having refused to take the rails in question from them. Indeed, the great ironmaster who proved for the defendants that he had made these rails in the spring of 1846, said they were not the worse for having been so long made, and that they were better than they would have been if the plaintiffs themselves had manufactured them. The iron market had fallen between the time of the contract and the delivery of the rails and the demand of the template.

The LORD CHIEF BARON, in summing up, said he thought the plaintiffs had complied with the contract by the tender of the first 1000 tons; and that even if they had not, as time was not of the essence of the contract, the defendants could not, in consequence of the plaintiffs not delivering the required quantity in May, repudiate it altogether. Verdict for the plaintiffs—damages 3376*l.*

VICE-CHANCELLOR'S COURT—DECEMBER, 20.

THORNEYCROFT *v.* CROCKETT.—This case came on upon exceptions to the Master's report under these circumstances:—The plaintiff was the mortgagee of certain lands in Staffordshire, upon which there were coal mines, and this suite was instituted to foreclose those mortgages. The plaintiff was mortgagee, in possession of the lands, and at places called Great Munmore and Little Munmore, had opened and worked mines and obtained therefrom coal, ironstone, &c., by means of machinery which he had erected. The answers were put in and the decree made, by which an account was directed to be taken of the rents and profits of the hereditaments contained in the mortgage to the plaintiff, and in case it should appear that the plaintiff was in occupation, the Master was to charge a rent, and in case money should have been expended in repairs, the amount to be deducted from the rent, in case of the excess of which rests were to be made. The Master made his report upon a state of facts and evidence, and had allowed rests to the amount of 1300*l.* 15*s.* 11*d.*, but had not allowed the plaintiff one farthing for the expenses of working the mines. To this non-allowance the present exceptions were taken.

Mr. J. PARKER and Mr. FABER appeared in support of the exceptions.—The plaintiff was compelled by the default of the mortgagors to enter into possession of the mines, which had been worked at a loss, and the law laid down in the case of "Sir Charles Morgan *v.* Powell," 3 Queen's Bench Reports, was, that where a person brings a chattle into such a condition that it becomes marketable, he is entitled to the cost of working it. In the case of "Balcarras *v.* Johnson," which had been very recently before the Lord Chancellor, his lordship had put the case of a trespasser cutting down trees, and observed, that although upon an action of trover the jury would not allow the expenses of cutting, in equity it would be made a subject of account, and allowed. If this was the law with regard to a mere trespasser, how much more with a mortgagee, who, by the act of a mortgagor, was forced to take possession, and after working the mines was not to be allowed one penny for working them? The account also directed by the decree—namely: of the rents and profits—was in such a form that the Master had no right to state the balance as he had done, and on all these grounds the exceptions ought to be allowed.

Mr. Stewart and Mr. Green appeared for second mortgagees; Mr. Bethell appeared for the trustees; and Mr. W. W. Cooper appeared for the mortgagors, without hearing whom—

The VICE-CHANCELLOR said, that if there had been any intention to take such an account as the exceptant contended for, the decree would have been in a different form. Here the mortgagee had actually sold the inheritance; the exceptions must, therefore, be overruled, with cost.

SUSPENSION BRIDGES.—In Mr. Gladstone's interesting paper, on Malleable Iron Lever Bridges, read at the Society of Arts [the particulars of which appeared in the *Mining Journal* of the 20th November], the author complimented the late Mr. Telford as if the merit of the invention of the chain or suspension bridge was due to that eminent engineer. The president for the evening, Mr. Walker, in the few observations he made upon the paper, took the opportunity to correct this error, and to inform the meeting that Mr. Telford never assumed the invention as his, but gave it to Captain, now Sir Samuel Brown, R.N., to whom only it, as well as the introduction of chain cables, was due; that the error arose from Mr. Telford being engineer to the Menai Bridge, but that the bridge over the Tweed, near Berwick, of 500 feet span, had been erected several years before the Menai. Mr. Walker added that Sir Samuel Brown had informed him, with apparent pleasure, that he took, one dewy morning, the first idea of a suspension bridge, from observing the construction of a spider's bridge thrown across a garden walk. To this natural little architect, therefore, the communication of the idea is due; and thus the principle of the suspension bridge was in use as soon, to say the least, as the arch or any other; but it was not until the present century that the adaptation of the principle for the use of man appears to have been thought of.

THE KOH-I-NOOR.—This famous diamond (the largest and most precious in the world), forfeited by the treachery of the Sovereign at Lahore, and now under the security of British bayonets at the fortress of Govindghur, it is hoped will ere long, as one of the splendid trophies of our military valour, be brought to England in attestation of the glory of our arms in India. The mischievous superstition attaching to the possession of this unique and invaluable diamond might be utterly crushed by this retributive consignment; and our august Queen, herself the brightest example of female sovereignty in the annals of England, would be appropriately adorned with a jewel of analagous value to that of the loyal estimation so universally assigned to her in the hearts of her subjects.—*Delhi Gazette.*

RINGWORMS, SCORBUTIC AFFECTIONS, AND OTHER SKIN DISEASES CURABLE BY HOLLOWAY'S OINTMENT AND PILLS.—In the East Indies, diseases of the skin are very prevalent among the natives, and Holloway's ointment and pills have been most successfully used in a variety of cases. The editor of the *Mofussilite* instances that of a Coolie employed in his establishment, who was "afflicted with myriads of ringworms, which defied all the Hecrut doctors, and promised to devour the poor man before he was even underground." Holloway's pills and ointment were then tried, and in a month he was perfectly restored to his former healthy condition, and cleanliness of skin. Sold by all druggists, and at Professor Holloway's establishment, 244, Strand, London.

LITERARY NOTICES.

On the Prevention of Accidents in Mines. By JOSHUA RICHARDSON, F.G.S., M.I.C.E. Neath: T. Maber; London: Longman and Co., 1848.

The continual reports of accidents in coal mines, from various circumstances, but particularly from explosions, by which an enormous amount of loss of human life is the result, are of the most lamentable nature, and render every work published, for the purpose of throwing any additional light on their prevention, of the utmost interest to the mineowner and the public. So many works on this subject have been laid before the public—so many elaborate papers read before scientific societies and Parliamentary commissions—and so many contrarieties have been broached by mining engineers on the subject of ventilation, that little new is left to say or write on the subject. In the body of the work before us, we do not find anything which can be considered the particular views of the author; it is principally extracts from the voluminous reports of the commissioners and sub-commissioners, appointed by the Legislature in 1841, but is well arranged, and gives the very cream of the evidence adduced, and repetitions avoided. At the conclusion, the author takes a review of the various causes of accidents, under the several heads of explosions, falls of roof, accidents in shafts, inundations, and miscellaneous causes, and in which many useful observations and suggestions will be found for good ventilation, the securing the shafts, the use of flat-ropes instead of chains, the drainage, and many other ideas, which are well worthy the attention of coalowners and viewers, to whom this little work will prove of immense advantage, if they will attend to its contents.

The Physical Properties of Steam, in relation to the Mobile Matter of the Steam-Engine. By JOHN CURR, of New South Wales. London: John Williams and Co., Strand.

This is a pamphlet explanatory of the powers and properties of steam, and the only fault we can find with it is, that it is written in so abstruse and algebraic a style, that few general readers can understand it, and many of our most "eminent engineers" will be obliged to have a recurrence to their *Euclid*, to refresh their memories on many of the calculations required, and even then often without success. Notwithstanding this, the little work before us bears unmistakeable evidence of a deep and studious investigation of the subject, and a practical knowledge of its details. With respect to propelling steam-vessels he says:—"The present method of propelling ships across the ocean by steam, is a most significant example of the immaturity of the invention, and a stain on the great repute of English science and ingenuity in mechanics. To thrash water as a farmer thrashes corn, to break it into bubbles, and scatter it in every line but that which is *proper*, would rather designate the purport of the paddle than that for which it is intended. The screw and paddle are cousins-german, and, consequently, both are patronised by the British Government, and their work is as near to par as *tam* and *quam*."

The author complains of the difficulties always being placed in the way of the introduction of anything new in mechanics; and proposes to any Government, in amity with Great Britain, a plan for the erection of a steam-engine on board a vessel, which shall, by means of the common paddle-wheel, propel it at any speed through the water which may be determined on—that the cost of engine, and consumption of fuel, shall not exceed 55 per cent., taken relatively to the cost and consumption of fuel by any engine hitherto made, which propels a similar vessel, either by screw or paddle, at an equal speed through still and disturbed water. He states, that the liability to accident, and stress on the vessel, shall be greatly reduced, in comparison with any existing contrivance—and that the merit of the invention consists in the common paddle-wheel being so applied as to produce motion in the water, which it strikes either in a line directly opposite to the line of the vessel's motion, or parallel with it. He then proceeds to describe and descant upon the principles of the steam-engine, which he very properly describes as "a machine, of which the motion and power are generated by the action of fire on water, whereby the latter suffers a change of state, and becomes an elastic vapour;" and he then proceeds to determine the power produced by such action, by examining the laws to which the pressure and expansion of vapour are subject, for which we must refer our readers to the pamphlet. They are very learned, founded on 27 axioms and seven definitions, all of which, we believe, are founded on true formula, and justify the resulting calcula. Mr. Curr then describes the condensing engine, the expansive engine, and the high-pressure steam-engine, and concludes with a dessertation on boiler explosions, their causes and methods, which it would do well for all persons attending boilers to make themselves acquainted with. In the present day, when, by steam, the population of the world is travelling over its entire surface, it is highly necessary that the true properties and powers of this elastic vapour should be known; and as every individual who values existence has a deep interest in the subject, we heartily recommend this pamphlet to every engineer.

Architect's, Surveyor's, and Builder's Almanack, 1849.

A sheet almanack, got up in a neat style, for the ensuing year, has just been issued, and which will be found a ready and useful work of reference to all connected with these professions. In addition to the usual contents of an almanack, it gives a complete list of official referees and district surveyors of the Middlesex, Surrey, and Kent divisions, within the Middlesex and City of London districts; the fees to be paid to them under all circumstances; diagrams of the construction of the several rates of houses under the Building Act, with a long abstract of the latter, the Paving, and the Chimney Acts, with other miscellaneous matter.

The Patent Journal Almanack for 1849.

This almanack has also made its appearance, and is quite on an equality with those of former years; besides the usual annual matter, there is a complete list of patents to the end of October last, a list of bankers, &c., and the whole is surrounded by diagrams of some of the best inventions, from the past year's *Patent Journal*.

Rees' Improved Diary and Almanack for 1849.

This is a neat little production, emanating from the town of Llandovery, in Wales, and is a credit to the principality. It is well filled with information for reference during the year, which is very judiciously arranged, and contains all that can be required in a work of this description. The Diary is quite distinct from the Almanack—thus giving more space for memoranda, and even in this the principal holidays and particular days are noticed. It is published in London by Simpkin and Marshall.

PATENT MANUFACTURE OF HIDE ROPES.—There is a description this month, in *Tait's Magazine*, of a machine invented by Mr. W. A. Foster, of Glasgow, which cuts up hides, without a break, into cords or thongs from 200 to 1600 yards long, according to their width. The hide is stretched, wet, upon a disc of wood, to which it adheres sufficiently to bear the action of the cutter. The tool being set to the greatest diameter which the skin affords, it is depressed till it pierces the wood. Motion is then given to the machine, and the skin becomes a circle. The tool begins to travel towards the centre, at the same time that the table moves round. If the desired breadth of the throng be the eighth, or the fourth, or the half of an inch, or any other measure, the tool moves to that extent every time the machine completes a revolution, until the whole skin is cut up. The manufactures of the patentee consist of shuttle cords, driving belts, tiller-ropes, &c.

THE ELECTROTYPE PROCESS.—An enormous application of the electrotype, or galvano-plastic process, has been made in the sculpture of the cathedral of St. Isaac, at St. Petersburgh, by the architect. After having made very important experiments, he was authorised to adopt this mode in the execution of the metallic sculptures and carvings for the following reasons:—1. The identical reproduction of the sculpture without chiselling.—2. The lightness of the pieces, which enabled the architect to introduce sculptures of higher relief than any hitherto known, and to fix the pieces suspended from the vaultings, without fear of accident, or of their being detached.—3. The great saving of expense between these and castings in bronze. The gilding also was effected by the same process, and presented equal advantages. The seven doors of the cathedral will be of brouze and electrotype, the framework being of the former, and the sculptural parts of the latter. Three of these doors are 30 feet high, and 14 feet wide, the four others 17 feet 8 inches wide. They contain 51 bas reliefs, 68 statues, and 84 alto-relievo busts, of religious subjects and characters. The quantity of metal employed in the dome is as follows:—Ducat gold, 247 lb.; copper, 32½ tons; brass, 321½ tons; wrought iron, 524½ tons; cast-iron, 1068 tons; total, 1966½ tons.—*Builder.*

VICISSITUDES OF MINING.—Humboldt relates of a Frenchman, J. Laborde, that he went to Mexico very poor in 1743, and acquired a large fortune in a very short time by the mine of La Canada. After building a church at Tasco, which cost him 84,000*l.*, he was reduced to the lowest poverty by the rapid decline of those very mines, from which he had annually drawn from 130,000 lbs. to 190,000 lbs. weight of silver. With a sum of 20,000*l.*, raised by selling a sun of solid gold, which, in his prosperity, he had presented to the church, and which he was allowed by the archbishop to withdraw, he undertook to clear out an old mine, in doing which he lost the greatest part of the produce of this golden sun, and then abandoned the work. With the small sum remaining, he ventured on another undertaking, which was, for a short time, highly productive; and he left behind him, at his death, 120,000*l.*—*London Anecdotes.*

THE INDIAN MAIL.—The Peninsular and Oriental Steam Navigation Company have made an offer to her Majesty's Government to transmit the mails of the beginning of the month direct from Southampton to Bombay, at a charge less, by 50,000*l.* a-year, than that which they now cost the Government and the India Company, with the abominable breach from Malta to England. Within the last 10 years the overland mails have cost the India Company above three-quarters of a milion sterling. Her Majesty's Government have paid the other quarter; and the outlay has been a million in all.—*Bombay Times*, Nov. 16.

NEW METHOD OF DRESSING ORES.

[Specification of patent granted to C. H. Capper, Esq., Edgbaston, Warwick, for a method of preparing and cleansing minerals and other substances.]—*Mechanics' Magazine.*

This invention relates to four different apparatuses for sieving and cleaning ores. The first apparatus for sizing or sieving the ore, consists of a water vessel, over which is suspended a wire-gauze cylinder, in a slanting direction. The meshes of the upper half of the sieve are smaller than those of the under half. The axle of the highest end of the cylinder is furnished with a pulley, by which rotary motion is imparted to it, through the intervention of an endless band, from any prime mover. A vertical partition, placed exactly underneath where the two-sized gauzes meet in the centre of the cylinder, divides the water vessel into two parts. The ore, after it has been reduced into small pieces, is introduced into the upper half of the cylinder, the gauze of which contains the smallest sized meshes. On rotary motion being communicated to the cylinder, such particles of ore as are smaller than the meshes fall through into the water contained in the first half of the water vessel. The rest of the ore then rolls down into the second half of the cylinder; and such pieces of ore as are small enough, fall through the meshes into the second half of the water vessel, while the ore which may yet remain in the cylinder, is, by its rotary motion, projected into a shoot which conveys it into a suitable receptacle. The apparatus used in connection with the preceding, for dressing the sifted ore, consists of a vessel with a wire-gauze bottom, perforated with holes, into which the ore is conveyed from a hopper furnished with a suitable arrangement for regulating the supply. This vessel is fitted (one on each side) with two tubes or shoots, which slant downwards; and is placed inside a water vessel, through the sides of which these shoots pass out into another water vessel. On a jigging motion being communicated by means of a lever to the inside apparatus, such particles as are small enough will pass through the bottom of it into the first water vessel, while the larger pieces will be conveyed by the slanting tubes or shoots into the second or outside water vessel.

A second cleansing apparatus consists of a semicircular horizontal trough, suspended eccentrically over and partially immersed in a vessel containing water. The trough is fitted at one end with a rod, carrying a bob to balance the ore contained in it, while a vibratory or oscillating motion is communicated to it at the other end, whereby the water, flowing in and out over the top, carries with it the earthy particles in suspension, while the ore remains undisturbed at the bottom of the trough.

A third apparatus consists of a wheel rotating slowly in a vertical plane, and furnished on each side of the periphery with a flange. The ore is conveyed through a shoot from a hopper on or near to the highest point of the wheel, between the flanges, where it encounters a stream of water flowing in a contrary direction from a cistern above. This stream of water, meeting with the ore, holds in suspension the earthy particles combined with it, and carries them round the wheel in a direction the opposite to its rotation, and delivers them through a shoot into a suitable receptacle. The ore, remainmg undisturbed by the current of the water, is carried round with the wheel, and is delivered through a shoot. The whole of these apparatuses are stated to be applicable to the cleaning of substances the component parts of which are of different densities.

Claims.—The patentee, passing over the first, or sieving apparatus, claims—

1. The construction of a jigging apparatus, with a perforated bottom, through which the small pieces of ore pass, and the application of tubes or shoots to convey away the other particles, as described.

2. The construction of an apparatus in which the ore to be dressed is placed in a trough partially immersed, to which oscillating motion is communicated whereby the earthy particles are held in solution, and separated from the ore as described.

3. The construction of apparatus in which the ore to be dressed is brought on or near to the highest point of a wheel revolving in a vertical plane, where it is subjected to the action of a current of water conducted to near the same point, and flowing in a contrary direction.

VALUE OF COALS AND CANNEL, FOR THE PURPOSE OF ILLUMINATION.

Extract from a paper, by Andrew Fife, Professor of Chemistry, King's College University, Aberdeen, published in the *Edinburgh New Philosophical Journal*:—"Keeping in view what has now been said regarding the quality of gas which the different kinds of coal afford, an estimate may be formed of the comparative value of these coals for that purpose, independent of the price paid for the coals, and also of the returns made for coke and other matters disposed of—such as ammonia, &c.—and in doing so, I still take the English caking coal as unity. A ton of English caking coal yields, on an average at gas-works, 8000 feet of gas; and though a larger quantity was given with my apparatus, yet we must take 8000 as the quantity on a large scale. The value of the coal is taken as 1. The Wigan Cannel yielded 9500 and 11,500—the value of the gas, bulk for bulk, being the same—viz., 1·85 to the former, as 1. Now, taking into account the quantity of gas afforded, the value of the coals for yielding light, by the consumpt of their gases, is as 2·23 for the one quantity, and 2·5 for the other; taking the average, we state the value of English Cannel coal as 2·35; or, say 2¼ to Newcastle caking coal, as 1."

Mr. Leigh, Consulting Chemist to the Manchester Gas-Works, after making more than 30 analyses, both on a large and small scale, has found that the Ince Hall Coal and Cannel Company's Cannel yields 11,673 feet of gas per ton, such gas being composed of—

Carbonic oxide and aqueous vapour	1·53
Olefiant gas and divers hydro-carbons	8·50
Atmospheric air	4·32
Nitrogen	0·19
Hydrogen	40·30
Light Carburetted hydrogen	33·83
Carbonic acid	11·35=100·02

Specific gravity of gas, 620.—Coke per ton produced, 13 cwts. 0 qr. 18 lbs.

Price of Cannel per ton, delivered in London, 26*s.*

SUPPLY OF WATER TO LONDON.

The following facts are compiled from a letter, addressed to Lord Morpeth, by Mr. Loude Tabberner, "On the Past, the Present, and the probable Future Supply of Water to London, and Sanitary Reform," which has just made its appearance. So far back as the reign of Henry III. the corporation of London constructed some conduits at Tyburn, to supply the inhabitants of the City with water, and foreign merchants were obliged to purchase the privilege of housing their goods by paying 50 marks yearly, and 100*l.* in ready money, towards the improvements of these conduits. The Old London-bridge Water-Works were established in 1581, the first works of the kind in London. In 1594 some works were erected at Broken-wharf, in Thames-street, which were removed in 1756. About 1606 the corporation of London took powers by Act of Parliament for constructing what is called the New River, and made over their powers, by act of common council, to Sir Hugh Middleton, who undertook to complete the work at his own cost. The sources of the supply of water were the springs of Amwell and Chadwell, in Herts. In 1619, James I. incorporated Middleton and others as the New River Company. The cost of this circuitous conduit of nearly 40 miles was about 500,000*l.*, and the capital was divided into 72 shares.

In 1660 the Shadwell Water-Works were commenced; they are now the property of the East London Water-Works Company. In 1691 the York-buildings Water-Works was established, to serve the Strand with water, and in 1818 they gave up the district to the New River Company. The Chelsea works were established in 1723; the West Ham in 1747, now belonging to the East London Company; the Old Borough in 1750, which was consolidated in 1822 with the Old London-bridge works, under the name of the Southwark Water Works; and in 1785 the South Lambeth were constructed. These were the only works in existence up to 1805, since which the following have been established—viz.: the South London, the West Middlesex, in 1806, the East London in 1807, the Grand Junction in 1810, the Old Hampstead Works, and the Kent Water-Works upon the Ravensbourne, near Deptford.

Mr. Tabberner suggests that the water supplied by the services of the present companies should be used for sanitary purposes only, and should be paid for by a sanitary water-rate upon every dwelling and building, according to the number of rooms contained in such, or on the assessed rental. He proposes that every house and building should be compelled to contain water-closets and forcing-sinks, capable of receiving a sufficient flush of water to carry the refuse of every place directly away into the sewer; and that the deadly pollutions from the gas-works, distilleries, and the various manufactories on the banks of the Thames, should be turned into the sewers instead of into the river. His plan for the future supply of water is to have Artesian wells in sufficient number throughout London, to be supplied by boring into the chalk formation below the sand-bed under the plastic or London clay, which would, according to him, give an unfailing supply of water. He proposes 85 such wells north of the Thames, and 15 south, the estimated cost of which is stated at 1,757,259*l.* He would purchase the existing water companies' plant at 10 years' purchase, for 1,985,252*l.* 10*s.*; the expense to be met by a loan of 4,000,000*l.*, which will leave a balance of about 250,000*l.* for the erection of baths and wash-houses for the poor.

Mr. Notter, so long and so favourably known to the theatrical world as the civil and obliging box book-keeper at Covent Garden, and afterwards at Drury Lane, under Mr. Macready's lesseeship there, having been, with a large family dependent upon him for subsistence, thrown out of employment by the melancholy condition of the drama in London, a number of his personal and respectable friends have opened a subscription, to rescue him and his from difficulty and distress, and the prospect of "perfect ruin." We earnestly hope this call will meet the public response it deserves, and Mr. Notter have the benefit of a fund sufficient to establish him in a business for a livelihood. The Queen Dowager has subscribed 5*l.*, and all the principal librarians and music-sellers have consented to receive subscriptions.

On the Winning and Working of Collieries.

BY MATTHIAS DUNN, MINING ENGINEER.

No. XXIII.—[*Continued from the Mining Journal of the 2d December.*]

Having detailed the systems of ventilation as practised in their most approved state, it may naturally be expected that I should particularise some of those which are self-evidently defective—that is to say, inadequate both in scientific principle and ordinary practical knowledge.

First, then, I may mention that in a great many collieries we find no ventilating furnace, or if such there be, ten to one but it be either too diminutive, or fitted up so ineffectively that it cannot maintain an air current in a uniform manner. Until lately it was quite common to see collieries dependant for their ventilation upon a wooden box of 12 or 14 in. square, sometimes led to the engine fire as a substitute for a proper furnace, and sometimes operated upon by a small revolving fanner, worked by a steam-engine. There is often great inattention in the maintenance of the air ways in an open and travellable state, but the air is just left to squeeze its way through passages almost impervious to the air, and consequently liable to continual contraction and stoppage by the falling down of the roof. I need hardly express the dangerous consequence of allowing the Davy lamps to remain in the hands of the workmen unattended to, or of permitting them to be the proper judges as to when and where they ought to be used, as the most advantageous light of the candle continually tempts them to incur the risk of explosion.

In many of the thick seam collieries, and also in extensive collieries, the quantum of atmospheric air is altogether disproportioned to the space requiring to be ventilated, hence the constant succession of accidents arising from accumulations of gases. In short, where collieries are of minor importance, or in which the working may be let to butties or contractors, the proprietor too often loses sight of the advantage that would accrue both to him and his people by the employment of some intelligent and scientific manager; hence the fact that life and property are left in the hands of persons inadequately educated and experienced. Nothing is more common than to hear persons express opinions that practical colliers are the most efficient persons to conduct, economically, a coal mine, forgetting that true practical science includes economy, whilst it enables the individual to take that comprehensive view of the subject, in which men of a different description will ever be found, in respect to management, to be most ineffective.

BAD VENTILATION.

As it is far from improbable that Parliament may again, at no remote period, be called upon to exercise its judgment upon legislation for the mines, it may not be uninteresting to advert to some of the facts adduced by the commissioners, who investigated the condition of the mines previous to the passing of Lord Ashley's Bill. Much of their attention was devoted to the condition of women and young boys, which I will purposely omit, and confine myself to a few extracts upon the subject of deficient ventilation, as bearing materially upon the calamitous loss of life, which so often enlists the sympathies of the public, and which will no doubt form the chief ground for parliamentary interference hereafter.

"The best mode of ventilation hitherto discovered is by two shafts, the upcast being furnished with a good rarefying furnace. That in all the districts there are particular mines, in which, often at great expense to the owners, every precaution is taken which intelligence and skill can devise to render the mine healthy and safe; but that there are great numbers of mines in which both ventilation and drainage are grossly neglected, and in which, as a necessary consequence, there is often a frightful destruction of human life."

Mr. Woodhouse, of Overseal, says, speaking of the collieries of Derbyshire, "the improved system adopted in the collieries of the Tyne and Wear of dividing the workings into districts, and so obtaining a current of fresh air in every direction, may, in many cases, be adopted at a trifling expense, and the result would be favourable in a corresponding degree. In pits with a rapid circulation, the men respire freely; the roadways are kept dry, and repaired at less expense, and therefore it is a matter of strict economy to ensure a good ventilation; the men suffer most materially from working in an impure atmosphere. In some mines the air can scarcely be seen to move at all, a thick mist or fog pervading the whole pit, which is caused partly from fermentation in the wastes and old works, partly from the lights, and partly from the heat and effluvia of the horses and men. This, with a large proportion of carbonic acid gas, forms an atmosphere that none but colliers, who are accustomed to it, could endure, but which has the effect of shortening their lives." R. Blont says, that "they have no wildfire, but black-damp. It swells their bellies, and makes their heads ache. Others, again, have wildfire, but no black-damp."

WEST RIDING.—"I may with truth state that ventilation is not sufficiently attended to for the health and comfort of the workpeople; whilst, in some, it is so imperfect that it is positively dangerous. The thin pits are almost always the worst ventilated. Mr. Barber, the proprietor, being asked what provision there is for ventilation, answers—none: not being necessary."

LANCASHIRE AND CHESHIRE.—"Throughout Lancashire and Cheshire the strata are of such a quality that they emit little fire-damp; and they are so much inclined in the dip, that this gas, which is of lighter specific gravity than common air, easily escapes without danger, and without any extensive provision of air-doors, trappers, and artificial draughts. Is not aware of any mines in which trappers are employed. Davy lamps are little used except in trying the mine; but there is not, for 10 miles around Little Bolton, one used in the working. There may be a few about the mines of St. Helen's and Wigan, but it is not generally the case in these coal-fields."

EAST OF SCOTLAND.—"The coal mines in the east of Scotland are in a deplorable state, the main principle being ill understood, and as ill practised, to the great danger of the workmen; minor accidents are constantly happening. At Dysart the manager says: we have no other method of ventilating our pits than by leaving open unemployed shafts. Paton, of Largo, says: the choke-damp gathers below in soft weather, and the small coal has often taken fire spontaneously, and acted injuriously on the men. Sundry colliers say: we leave work when the bad air is in the pit. A. Adam, Edmonstone Colliery, says: bad air frequently stops my breath. When the weather is warm, there is a difficulty in breathing, and the lights go out. Mr. Johnson, of Houston, used a fanning machine for drawing the impure air from the pits; it was merely a circular fan with vanes like those of a winnowing machine, only working horizontally within a circular case; this case was fixed air-tight into the mouth of the pit, and being worked by hand, was so powerful that its effects extended to the distance of three-quarters of a mile."

SOUTH WALES.—R. H. Franks says, that "in a great number of coal mines ventilation is much neglected, the prevalence of carbonic acid gas, although it undermines the health of the work people, does not kill like fire-damp; the people only leave work when the proportion of this gas is so great as to overpower the atmospheric air, and prevent the candles from burning; it is the occasion of a great deal of loss of work." The commissioner winds up with—"Labour in the collieries in South Wales is, from want of proper ventilation and economy of mining operations, extremely unwholesome, and productive of diseases tending to shorten life."

[*To be continued in next week's Journal.*]

A BROWN STONE.—A brown stone, in no respect presenting anything by which it shall be distinguished from other rude stones around it, is found, upon close examination, to possess the power of drawing light particles of iron towards it. If this stone is placed upon a table, and iron filings are thrown lightly around it, we discover that these filings arrange themselves in symmetric curves, proceeding from some one point of the mass to some other; and upon examining into this, we shall find that the iron, which has once clung to the one point, will be rejected by the other. If this stone is freely suspended, we shall learn also that it always come to rest in a certain position—this position being determined by these points, and some attractive force residing in the earth itself. These points we call its poles; and it is now established, that this rude stone is but a weak representative of our planet. Both are magnetic—both are so in virtue of the circulation of currents of electricity, or of lines of magnetic force, as seen in the curves formed by the iron dust, and the north pole of the one attracts the south pole of the other, and the contrary.—*The Poetry of Science.*

SOUTH DEVON.—The requisition of the Bristol shareholders, calling on the directors to convene a meeting for the re-consideration of the atmospheric system, has been presented to the board, but it has not yet come under consideration. Mr. Woolcombe, the late deputy-chairman, succeeds Mr. Gill, M.P., as chairman of the company. None of the atmospheric apparatus has yet been taken up or removed, and the locomotives still work over the rails with the tubes between them. The recent high tides have swept away a large portion of the public promenades on the sea-side of the line, and at some exposed points where the sea encroaches too near to the rail, so as sometimes to sweep on to it, breakwaters are being constructed. The extension of the line from Laira into the heart of Plymouth is not likely to be opened before February next.

THE COPPER TRADE.—No. III.

The Miners' Company was a great delusion. Those eminent merchants who engaged in that undertaking, which has proved so ruinous to their fortunes, will heartily agree with me, that they were greatly deluded. The deep humiliation of fortune that has fallen on all, I believe without any exception, who engaged in the scheme, either as projectors or promoters, must however, excite, in spite of the many errors committed, deep commiseration and disarm censure. Nothing could be more imposing than the entrance of this great company into the metal trade. Clothed in an ancient charter, with a dignified management, and a limited liability, the governor and court of assistants of the corporation presented a long array of names of mercantile eminence, including several directors of the Bank of England. Alas! how many have been humbled to the dust, and of those who remain standing, how close are the toils in which they are encircled! All this influence, all this credit, all this respectability, only served to increase the circle of disaster, and enlarge the whirlpool that swallowed the enormous sums of money raised by shares, preference shares, debentures, and loans from the Bank of England, so that I believe a million and a quarter of money has been swamped in the Miners' Company!

How a number of intelligent and able mercantile men, who must have known from the experience of their own concerns, that in business more than in any other pursuit, "a little knowledge is a dangerous thing," could have fancied that by meeting once a week, to a good lunch, they were likely to conduct with success such complicated businesses as copper smelting, tin smelting, iron making, tin plating, colliery working, &c., in all of which they were opposed to parties thoroughly conversant with these trades, and devoting to them their whole time, thoughts, and energies, must now astound themselves. But the minds of men have periods of credulity and confidence, to be succeeded by others of distrust and timidity.

The programme of the Miners' Company, on entering the copper trade, was "War to the knife to the smelters." On this condition they received the support of the mining interest, as represented by certain gentlemen, who stated themselves to speak the sentiments of that body. To conciliate also the support of the consumers of copper, they promised to leave their prices free and open, and finally, they held out a prospect of enormous profits to their shareholders. They were, of course, therefore, a very popular company, for they were to give the miners more money for the ores, to supply the metal to the consumers at a cheaper rate, and to make large dividends. Such a programme, faithfully carried out, would have ruined the Bank of England itself, only it would have taken more time to do it.

For about four years the Miners' Company kept faith with their supporters—they ruined the copper trade. At first, they had not much power, their smelting being confined to the Forest Works. When, however, their new works at Cwm Avon were fully in operation, the fiercest competition arose. For two years this contest was at its height; it was no longer as before, a struggle who should carry on the smelting business with the finest profits, but whose purse should last the longest. The great smelters lost at the rate of from 20,000*l.* to 30,000*l.* a year, and the others in proportion, and on a rough estimate, I consider that at least 500,000*l.* went in this contest in a direct loss of capital and loss of profit. The smelters, of course, suffered severely, but by this time, the enormous outlays of the Miners' Company, their bad management, and the losses they made, completely altered their views; they abandoned their programme, and the smelters began to make profits again.

Sir C. Lemon, and those who with him have sought to arrive at the supposed increased profits of the smelters, by a comparison of prices during this period, and one more recent, will now see the fallacy of such approximations, unless in possession of all the facts. If there existed at a former period any tacit understanding and trust and faith between smelters and miners, different from other trades, where parties are free to buy as cheap and sell as dear as they can, it was flagrantly broken when so fierce an opposition was unnecessarily introduced into the copper trade. If there was no such understanding, and if, as promoting the interest of the miners, any means are fair and allowable to get up opposition to the smelting trade, then the smelters, in self-defence, must make large profits when they have the opportunity. The miners are now paying back part of the excess they received for their ores during these times, so prosperous to them but so disastrous to the smelters.

Ystalyfera, December 11. J. P. BUDD.

MR. BUDD AND THE COPPER TRADE.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—Mr. Budd's second letter to the Editor of the *West Briton* scarcely requires an answer. The hon. gentleman displayed his "intimate acquaintance" with the subject, by giving us a brief historical sketch of the rise and fall, not of the copper trade, but of copper houses. He shows us how the present monopoly has arisen out of "contests among the smelters," caused, in one case, "by the advanced position taken in the trade by Vivian's house," in 1819, followed immediately by the struggle with Messrs. Fox, Williams, Foster, and Co., who "*pushed*" other companies out of the trade, "and Williams's house fought their way to the head of the copper trade." He then gives us a "list of the slain," and, of course, the victorious party now enjoyed something like an undisputed sway, and revelled in the pleasures of the position they had so eagerly coveted. One cannot help thinking that the motive which prompted these great "contests" must have been of a considerable pecuniary nature. "When great battles are fought" there is usually a corresponding *casus belli*, sometimes it is to gain a valuable territory, and, therefore, we find that Mr. Budd tells us that, as the consequence of Mr. Vivian's proceedings in 1819, the profits of the smelters were reduced, and still further reduced, when Messrs. Fox and Co. became smelters—showing that it was the high returns of the trade which had tempted them to embark in it, and to undergo so much trouble and exertion, and even a temporary loss, to achieve their object. But. Sir, Mr. Budd, modest man, then adds, "the profits were *moderate*, never reaching, even to the great smelters, 10 per cent. on the capital employed." Now, he does not say *per annum*, and, therefore, it is fair to assume that such were the actual returns which, being made twice a year, would give, according to his own showing, nearly 20 per cent. per annum "to the great smelters!"

Mr. Budd's third letter, which appeared in the *West Briton* last week, contains its own answer. He has now disclosed the *animus* with which he writes. His object is evident; but, as he himself says, "a little knowledge is a dangerous thing," and in our zeal to evince our "intimate acquaintance" with a subject, although naturally biassed in our views, we sometimes unintentionally furnish facts which entirely subvert our own arguments. The honourable gentleman thus expresses himself with surprise, with reference to the Copper Miners' Company—"How a number of intelligent and able mercantile men could have fancied, that by meeting once a week to a good lunch they were likely to conduct with success such complicated businesses as *copper smelting, tin smelting, iron making, tin plating, colliery working*, &c., &c., in all of which they were opposed to parties thoroughly conversant with these trades, and devoting to them their whole time, thoughts, and energies, must now astound themselves." Well—the Copper Miners' Company, as a body, was, in fact, "Jack of all trades," and, as a natural consequence, "master of none;" and Mr. Budd apparently wishes to show us, that to make copper smelting successful, it is not necessary that the undertaking should be "clothed in an ancient charter," have "a dignified management," with "a long array of names of mercantile eminence, including several directors of the Bank of England;" but that it should be superintended and directed by "parties thoroughly conversant with the trade, and devoting to it their whole time, thoughts, and energies." I am sure the new copper smelting company ought to be greatly obliged to Mr. Budd for the apparent anxiety he evinces in their welfare and success, in impressing upon the promoters the causes of past failure, in order that they may avoid them; advice, too, the more valuable from his knowledge of the trade from his "early years," giving him power to adopt the oft repeated proverb, "*experientia docet.*"

And Mr. Budd might have added a little further information to those to whom he addresses himself—namely, that notwithstanding the mismanagement, or want of management, of the Copper Miners' Company, they made very considerable profits by copper smelting (the sum has been mentioned to me on good authority, but I do not wish to repeat it), which were more than swallowed up by their losses in iron-making, in collieries, and other matters. Is it not rather too much for Mr. Budd to admit, at the conclusion of his letter, that "the miners are now paying back part of the excess (?) they received for their ores during these times so prosperous to them, but so disastrous (as he says) to the smelters!" Then, because the conduct of the smelters themselves produced results by which the profits were temporarily reduced—now, having the power, as a set off, they deliberately raise them greatly at the expense of the miners! Should such a state of things exist? Is it right that they should have this power? Is it not proof positive that the miner is not only at the mercy of the smelter, but that the latter shamefully takes advantage of the circumstance? I am not one of those who have believed that the low price which has for some time been given for copper ores is owing entirely to the existence of a monopoly in the copper trade; but that it has arisen more from the comparatively limited amount of capital to meet a daily extending supply. The above announcement, however, inclines me to attach greater importance to the former cause than I was willing to do before. In confirmation, however, of my opinion that more capital is one of the principal remedies for placing the copper market in a sound and healthy position, I may state, that in the five years ending the 30th June, 1843, and the five years ending the 30th June, 1848, the quantities of copper ores sold in Cornwall and Wales were respectively 1,004,800 tons of 21 cwts., producing 99,596 tons of copper by assay, and 1,070,342 tons of 21 cwts., producing 109,515 tons of copper by assay. This shows an *increase* of 6¼ per cent. in the public sales of ore, and of 10 per cent. in the produce of copper by assay in the last over the previous five years; but I find that the amount of money paid for the ores in the first five years was 7,928,970*l.* against 7,890,410*l.* in the second, being an actual *decrease* of 38,560*l.* against the above increase in the ores and the produce! But, perhaps, this may be accounted for with Mr. Budd's kind assistance, who tells us that "the miners are now paying back part of the excess," which the smelters think they received for their ores, and which, from the relative position of the parties, they are now compelling the miners to repay. It is rather an extraordinary mode of recovering an alleged loss, and it is time that some one should determine when the debt was fulfilled. I certainly cannot agree with such a peculiar line of argument, and I must say it is rather a dangerous one to inculcate. Suppose all the great manufacturing lords should enter into a combination to lower very considerably the price of cotton, and act in concert with each other, both as to the price they should give for the raw material, and as to that at which they will sell the manufactured article, in order to make up any supposed previous losses. The "great houses" would no doubt soon "push" the smaller ones "out of the trade." Where, indeed, would the system end? Now, if it seems ridiculous to imagine such a state of things in any other case, why should it exist with regard to copper? I cannot tell what the views of the new smelting company are to be; but it deserves the support of the public, if it were for no other consideration but the subversion of so strange a doctrine.

Let us now see what are the profits the smelters are at present enjoying; and I would take this opportunity of replying to the observations of your correspondent, "P. I.," which appeared in your valuable and influential Journal last week. Your correspondent states, that he does not see sufficient inducement for himself and friends to embark their capital in a smelting company, and that he has no doubt that others take the same calculation and views of the affair. At the same time, it is evident that he has no confidence in those "calculations and views;" for, after making a statement, or rather half statement, he adds—"If I am wrong in my data, or have omitted anything in my calculations, pray set me right." Well, Sir, if you will allow me, I shall endeavour to "set" him "right" in the matter. Let me request his and his friends' attention to my mode of calculating the smelter's profit upon a ton of copper, and I know that neither they, nor any one else, can controvert it. Quoting from the public sales, "P. I." states, that "at Redruth, on the 9th inst., the produce is 7½ per cent., and the cost 4*l.* 6s. per ton—consequently, to obtain 1 ton of copper, 13⅓ tons of ore, within a fraction, must be purchased, amounting to 58*l.* Now, the average price of copper being 79*l.*, there remains 21*l.* for the smelter." Further than this he does not go, but simply assumes, that "after calculating the expenses attending the smelter's plant, labour, capital, coal, and other materials, besides the risk, credit, and transport of the produce," he considers the profit is not such as to justify him "in incurring the risks of a joint-stock undertaking." Let me then finish his calculations, keeping in mind also one or two "trade secrets," which he does not appear to be aware of. The ore is bought in tons of 21 cwts., while the copper is sold in tons of 20 cwts. each; besides which, owing to the process of assaying copper ores being necessarily conducted upon small quantities of each distinct sample, and not admitting of the rich slags, containing copper, being deprived of this metal in the manner accomplished in smelting copper ores on the large scale, a considerable proportion of copper remains in the rejected *assay slags*; consequently, the yield obtained by the assay is much less in quantity than that obtained by regular smelting operations. Again, the "prill, or "button," of copper, obtained from the sample of ore by the assay, is brought, by the great care and delicacy of the operation, to a state of extreme fineness, or purity; whilst merchantable copper contains a certain per centage of alloy, or impurity.

I have the best authority for saying, that the extra cwt., or 5 per cent., together with the differences in the assay above stated, may be safely taken at 10 per cent. Indeed, a gentleman practically acquainted with large smelting operations, told me, the other day, that even if copper were sold at the exact price it cost the smelter to make it, he would still realise a handsome profit from the surplus produce. Take, therefore, the case given above:—12½ tons (20 cwts.) of ore, of 7½ per cent. produce (allowing 5 per cent. for the extra cwt., and 4 per cent. for surplus produce over the assay, making 9 per cent.) would be required to make a ton of copper. At 4*l.* 6s. per ton, the cost of the ore would be 52*l.* 13s. 6d.; add to this 30s. per ton, or 18*l.* 7s. 6d., for smelting expenses, carriage, and freight to Swansea and contingencies, and the total cost to the smelter will be 71*l.* 1s. The quoted price of cake copper for the last few months has been 79*l.* 10s.; deduct from this, agent's commission and freight (namely, 1*l.* 15s. 10d.), and there will remain 77*l.* 14s. 2d.—leaving a net profit to the smelter of 6*l.* 13s. 2d. per ton, or at the rate of 9¾ per cent. on the disbursements; but, being returned twice a year, is equal to 18¾ per cent. per annum. Such, then, is my view of the matter.

By-the-bye, as Mr. Budd considers nearly 20 per cent. per annum a *moderate* profit for the "great smelters" to make, perhaps he can inform us, what is the profit these gentleman usually have—in fact, I mean what they are generally content with, for as "the miners are now paying back part of the excess," which it is presumed they were once fortunate, or rather unfortunate enough to obtain, they (the smelters) must, according to Mr. Budd, have it very much their own way, to be able to compel the miners to refund that amount, even if they did, at one time, get too high prices for their ores. I shall now conclude, hoping, Sir, that I have not encroached too much on your valuable space, and that Mr. Budd will excuse me for taking the liberty of replying to the observations of one whose "intimate acquaintance" with the subject has extended from his "early years."—PLAIN FACTS: *London, Dec.* 20.

TO THE SHAREHOLDERS OF THE NORTH BRITISH AUSTRALASIAN COMPANY.

The general annual meeting is fixed for the 28th instant, and a preliminary meeting of shareholders is to be held on the 27th, to consider the position and prospects of the company, and the reports by the directors and the committee of shareholders. No sufficient reasons are assigned for the deplorable condition to which our affairs are reduced. Our grazing and agricultural operations are extensive, and the manager has uniformly stated that they were paying us handsomely. After 1844, we paid off *all* our encumbrances, leaving a large sum to cover the mining operations; 16,000*l.* of the debts then due to us have been realised, some of the properties then held have been sold, and no new purchases made. If the statements, plans, sections, &c., can be depended on, and there is every reason for believing that they may, we possess one of the richest, most extensive, and easily worked copper mines now known to exist. From this mine not a ton of ore has been sent home for years, while we are expending 1000*l.* a-month on it, or in attempts to reduce the ore to regulus. No difficulty seems to be experienced in raising ore to any amount—we have little or no land carriage—other parties have made money by mining from the same lode, even under the sea; and, although they do not possess a foot of dry land, are struggling hard to regain what they consider a valuable privilege. We, on the contrary, though in possession of the whole island, have only wasted a large capital, and involved ourselves in debt.

It is clear, therefore, that our affairs have been mismanaged, and that there is no hope, under the present direction, and with the present officers, of any change for the better. The contract of copartnery is a dead letter; we were called on to sanction a debt of 17,000*l.*, while no statement, no balance, is sent home by the manager to show how this money, and our other funds, have been expended. If we had active directors, an office, and paid secretary, in Aberdeen, a corresponding secretary in London, a thoroughly qualified miner, selected and recommended by our English shareholders, and a manager acquainted with country affairs, all would soon be well. The whole of the ore, wool, tallow, &c., would be sent to England—regular periodical statements of expenditure, valuations of property, and balance, would be sent to the secretary; these would reach him almost simultaneously with the account sales from London and Swansea, and he could ascertain the state of the profit and loss account 12 months before the same could be sent from the colony, after account sales reached the manager.

There is, thus, no apparent cause for our reverses but mismanagement, and no remedy but decision and firmness on the part of the partners; at the approaching meeting the remedy will be in our own hands. Come up to it yourselves, or send proxies to partners on whom you can depend; keep in mind that a very short time, under present management, will not only lead to the loss of our whole capital, but that we are personally liable for the debts already contracted, and for those that will soon be added to them.

Aberdeen, Dec. 19. I am yours, &c., A SHAREHOLDER.

STEAM-CARRIAGES ON COMMON ROADS.

RESPECTED FRIEND,—It affords me much pleasure to find the opinion I have formed of the superiority of Sir James Anderson's steam-carriage over all former attempts, confirmed by such an experienced and talented practical engineer as Thomas Clarke, of Hackney, whose abilities are evidenced by his superior atmospheric railway tube, and ingenious atmospheric pile-driving machine, &c., by whose advise and assistance Sir James will get the details of his several plans of arrangements finally so perfectly accomplished as to defy the most ingenious to surpass. By the adoption of timber tracks on common roads, steam conveyance will be *rendered absolutely certain*—the expense of which will not exceed 1000*l.* per mile, and would occasion no inconvenience to the trustees or the public; but, on the contrary, benefit the former, by reducing the cost of repairs at least 50 per cent., and afford the latter an opportunity of rolling over its surface comparatively smooth as on water. The interest of the cost of timber trucks, including the tolls, cannot exceed 100*l.* per annum per mile; whilst locomotive iron railways have cost from 40,000*l.* to 60,000*l.* per mile, involving a rent something like 2000*l.* to 3000*l.* per mile per annum; and as the traction on timber, making the most ample allowance for the undulations, is not one-third less than the iron roads, it must be evident, as Mr. Clarke justly observes, that the public may be conveyed by the means proposed at less than one-fourth the present charges made by railway, and yet afford a larger profit.—THOMAS MOTLEY: *London, 12 mo.*, 22.

THE COLLIERIES IN ANTRIM.—Messrs. Owen and Gillan (from London), two of the proprietors of Ballycastle and Meirlough Bay Collieries, North Antrim [the opening of which we noticed in last *Mining Journal*], had the honour of an interview with his Excellency the Lord Lieutenant of Ireland on Monday last, when a new and interesting product of the Irish peat, resembling spermaceti in quality and appearance, and which had been used for the manufacture of candles, was exhibited to his Excellency.

The Compendium of British Mining.

ORIGINALLY COMPILED AND PUBLISHED IN 1843.
REVISED, CORRECTED, AND ENLARGED FOR THE "MINING JOURNAL,"
BY J. Y. WATSON, ESQ., F.G.S.

TRESAVEAN COPPER MINE, in Gwennap, was once or twice abandoned as a failure; but at length taken up by a party who persevered in exploring it, and with an outlay of little more than 1000*l*., succeeded in discovering its wealth; and its continued richness offers an extraordinary instance of fortunate adventure. The mine is a very dry one, situate on the slope of a hill, and requiring comparatively little machinery to draw the water from it; the lodes are principally in granite, becoming profitless when they quit it, and pass into the slate. Under different companies Tresavean has yielded profits amounting to upwards of 800,000*l*.; and from 1814, to June, 1848, has returned the enormous quantity of 307,970 tons of copper ore, yielding 1,879,735*l*. 7*s*. 6*d*. The present company (in 96 shares, 10*l*. paid up) have worked the mine about 20 years, and have cleared a profit of 449,000*l*.; in one year the dividends amounted to 600*l*. per share, or 57,600*l*., and for several years averaged 30,000*l*. a year. At present the returns leave a very trifling, if any, profit, the cost being very heavy for labour and materials. The management is in the hands of a Cornish committee of merchants, and who, doubtless, find their profit in supplying materials to the extent of many thousands a year. The company have lately obtained a new lease for 21 years, at moderate dues, but we regret to say, we have been unable to obtain particulars from this mine—indeed, it may be remarked, there is the greatest difficulty in getting information of mines under Cornish management in general, and which is deterring many parties from investing in them, preferring, as is very natural, to embark in undertakings under London management, where nothing is concealed, but everything open to the inspection of "one and all." The machinery consists of several steam-engines, and the new engine-shaft, lately completed, is upwards of 350 fms. deep from the surface, and took two years and two months sinking, by 12 sets of men rising, and 12 sets sinking—in all, 120 men at the same time employed. On this shaft a steam-engine, with a cylinder of 86 inches diameter, has been erected, which works nine lifts of pumps, and lifts 36 tons 6 cwts. per stroke; the weight of rods and sets off in the shaft is 59 tons 13 cwts. 2 qrs.; the shaft main beam, with gudgeons, bearers, and connection, 50 tons; eight plungers, 7½ tons; four balance-bobs, 60 tons; four balance boxes, 80 tons; 75 fms. of flat-rods underground 11½ tons—total weight of engine when in motion, 353 tons 16 cwts. The price of this engine delivered on the mine was 4185*l*. The size of the shaft is 12 ft. by 6, and cost upwards of 20,000*l*. sinking. A machine for raising and lowering the miners has been completed on this mine. It is the invention of Capt. Michael Loam, and is formed of two perpendicular rods of wood, having projections about 12 ft. apart, upon which each man, ascending or descending, stands. In the rods are placed long iron handles, which the men lay hold of with the greatest ease. As one rod descends, the other ascends, and at every alternate step, there is a slight check, which affords sufficient time to enable the person travelling to remove from one rod to the other. The movement of these rods enable a man to travel about 11 fms. a minute. The machine is carried to a depth of 140 fms., and worked by a 36-inch double rotatory engine, acting upon two small wheels, which act upon two larger ones.

TRETHELLAN adjoins Tresavean to the west, and is on the same lodes. The sett is small, being about 84 fms. in length. In 120 shares, 20*l*. paid, present price 15*l*. Held on lease for 21 years (about 12 years expired) at 1-15th dues. Purser Mr. W. Richards, Redruth. The mine first made returns of ore in 1837, and up to June, 1848, has yielded 30,160 tons of copper, selling for 120,391*l*. 12*s*., out of which about 50,000*l*. has been divided as profit. In some of her "palmy days" Trethellan divided as much as 7000*l*. a year. At present the operations are confined to picking out the ores in the different levels, and which occasionally leaves a small profit.

WHEAL BREWER, adjoining, is in about the same position as Trethellan—nearly worked out, and about meeting cost. In 120 shares, 5*l*. paid, price 2*l*. 10*s*. Held on lease for 21 years (about 10 expired) at 1-15th dues. Purser George Simmons, Esq., solicitor, Truro. Commenced working in 1840, and to June, 1848, returned 5176 tons of ore, yielding 23,020*l*. 15*s*. 6*d*., out of which about 10,000*l*. have been divided as profit. For a small mine, and one worked at a trifling expense, the profits were for a short period very large, upwards of 3000*l*. a year, in consequence of which shares reached a price far above their real value.

[*To be continued in next week's Mining Journal.*]

Mining Correspondence.

ENGLISH MINES.

ASHBURTON UNITED.—Capt. J. Kernick (Dec. 18) reports—The lode in Hobson's 14 fm. level has not been taken down since last report. The north tin lode, in the three new cross-cuts, at Hobson's 45 fm. level, is looking well; the lode is from 1 ft. to 18 in. wide, and the stuff producing from 1 to 2½ cwts. of black tin per ton; at the cross-cut in Parry's 35 fm. level, this lode is also producing good work; the lode is 20 in. wide. I have this day put two men to clear the cross-cut north at Hobson's 35 fm. level, with a view to cut the north lode in that part, and, by my dialing, this will be done by driving 4 fms. The same lode will be intersected in Parry's 25 fm. level, by extending the cross-cut north 6 fms. The above three cross-cuts are objects to which I have directed our tutwork; and as the ground can be driven for about 50*s*. per *fm*., I hope, in two months, to lay open, on the above side-lode, a vast extent of tribute ground.

BARRISTOWN.—Capt. T. Angove (Dec. 15) reports—In the 16 fm. level end east the lode is considerably improved; it is about 3 ft. wide, and producing a half ton of lead per fm. The lode in the adit end east is not altogether so well as last reported, but still producing 8 cwts. of lead per fm.; in the winze, sinking behind this end, the lode is producing ¼ of a ton per fm. We hope to ship a small cargo of lead in the *Frances Mary* some time in the ensuing week, although she has not yet arrived at this port. The pitches in the back of the adit level do not look altogether so well as for some weeks past.

BEDFORD UNITED.—Capt. J. Phillips (December 20) reports—At Wheal Marquis, the engine-shaft is about 12 fms. 4 ft. under the 90 fm. level. There has been no lode taken down in the 90 or 80 fm. levels east since last reported. In the 70 fm. level east the lode is about 2 ft. wide, composed of mundic and ore. The pitches on the whole are looking favourable.

CALLINGTON.—Captain J. T. Phillips (Dec. 18) reports—In the 125 fm. level, north of Johnson's shaft, the lode is from 1 ft. to 18 in. wide, producing silver-lead ores, and of a promising character—the ground is soft for driving; in the south end the lode is split into branches, producing silver-lead ores. In the 112 north the lode has not been taken down, we are still in the elvans; in the south end, at this level, the lode has not been taken down. In the 100 north we have not yet got the lode. In the 70 south the lode is 6 in. wide, rather poor. At the north mine, in the 112 cross-cut, the ground is rather hard for driving. In the 100 south the lode is small and poor. In the 90 fm. level south the lode has not been taken down. At Kelly Bray, in the 90 fm. level east the lode is 1 ft. wide, producing good stones of copper ore. In the 70 fm. level east the lode is small and poor, the ground is soft driving. In the winze below this level the lode is improving, now about 20 in. big; the orey part is 1 ft. wide, good work. The stopes in the back of this level will produce from 3 to 4 tons of copper ore per fm. In the winze, sinking below the 50 fm. level, the lode is 18 in. big, saving work. In the stopes in the back of this level the lode will produce 2 tons of copper ore per fm. Kelly Bray engine-shaft is sunk 2 fms. below the 20 fm. level; the lode is 2 ft. wide, producing stones of copper ore. In the 20 fm. level east we have intersected a cross-course, dipping to the west; the lode is 1 ft. wide, alive in copper, the ground is improved for driving. We expect to see the effect of this cross-course on the lode in the 70 in the course of a few months, and look forward to a beneficial result.

COMBLAWN.—Captain James Hosking (Dec. 19) reports—The lode is still producing good stones of silver-lead ore, very promising indeed. We are and shall continue to push the 20 fm. level west on the lode, with all possible dispatch; and after the 15 fm. level is sufficiently drained, we intend sinking a winze on the lode, where it was found most productive in this level.

DEAN PRIOR AND BUCKFASTLEIGH.—Capt. H. Choake (Dec. 20) reports—We have discovered the hanging wall of the lode in the 40 fm. cross-cut, or rather of this part. I stated, in addition to my last report, that we had bored a hole 3 ft. in the end, and that, from the boring, I expected we had 2 ft. more to get through the lode, and that 1 ft. bored through softer ground; the latter I find to be the case—having met with a small slide course in the lode, has caused a more favourable change. We have driven south of the hard caples about 3 ft. 9 in., which has a more favourable appearance, and easier for driving, being part of the lode, composed of capel and a small portion of soft spar and mundic, intermixed with a little iron and killas, carrying a small string of flookan against the hanging wall. I should recommend to drive some 3 or 4 fms. east and west of the cross-cut, for I have seen, in some instances, in driving off a slide course, that an improvement has taken place, and the lode being productive for ores; while, at other times, lodes have been productive against the slide, or over or under; therefore, driving a little on each lode will give us a better insight, and also prove the lode to a certain extent. I should, in the first place, recommend to drive 6 ft. farther south, for I am still of opinion, that there is a part, or limb, of the lode to the south. We have driven in the past week 5 ft. 9 in.

DEVON AND COURTENAY.—Capt. N. Seccombe (Dec. 19) reports—The lode in the end driving west, on the gossan lode, in the 40 fm. level, is 2½ ft. wide, composed of mundic, spar, and peach, with some good stones of ore in the lode. In the cross-cut driving south, in this same level, to intersect the south lode, the ground continues rather hard; but, from the appearance of water oozing through the ground, I think we must be very near the lode. In the end driving east, on the south lode, in our 50 fm. level, the men are driving by the side of the lode this week.

EAST ALVENNEY.—Capt. J. Spargo (Dec. 20) reports—The lodes in this mine are the same as our parallel lodes to Wheal Vincent and South Havanah. The stamps are nearly completed, and will commence stamping on Tuesday next. Mr. Bennett has completed the floors and the dressing departments in a very satisfactory manner. The tributers are breaking some splendid work; I passed through the mine yesterday from Wheal Vincent, and saw some stones of tin hauled from the tributers' workings—I should say from 15 to 20 lbs., as solid as a piece of cast-iron; by the side of these branches the lode is composed of beautiful fluor-spar, all carrying good stones of tin; there is every appearance of this mine turning out a very profitable investment. The shaft is only sunk on the branches about 5 fms. under the old men's workings, and we have broken, I should say, 8½ tons of tin, of most excellent quality, and have, to the south of these branches, two promising lodes. If the mine was properly developed, and a perpendicular shaft sunk, to intersect those lodes to a greater depth, there is not a doubt on my mind but that those branches will fall together in the lodes, and make abundance of tin, as the ground is much softer around the lodes than the branches.

EAST CROWNDALE.—Captain S. Paull (Dec. 16) reports—We have not yet got into the lode in the cross-cut, north from Diamond's shaft, in the 17 fm. level; the ground is principally composed of elvan, and at present tolerably favourable for driving. The ground in the cross-cut south, in this level, has been a considerable deal better than in the past week, having gone through a channel of soft killas. Thomas's lode, in the adit level driving west, does not look so good as when last reported upon, the lode is at present chiefly composed of killas, &c., with a small quantity of peach, spar, mundic, and tin, worth about 30*l*. per fm. The stopes in the back of this level have continued on without much alteration; for some time past a lode, 16 ft. wide, composed on the north side of killas, on the south side peach, spar, mundic, killas, and tin, worth about 20*l*. per fm. Our engine, pitwork, stamps, &c., are all in good condition.

EXMOOR WHEAL ELIZA.—Capts. W. H. Whitford and Thomas Dunn (Dec 21) report—Since our last, our sinking operations have been maintained with good spirit and uninterrupted progress; the ground in the shaft is composed of a light killas, interspersed with branches of gossan of the most promising character for copper. We calculate our future sinking will be about 4 ft. per week. Our pitwork is in good order; nor are we likely again to be incommoded by water. Everything is going on regularly and comfortably.

HOLMBUSH.—Captain Wm. Lean (Dec. 19) reports—The ground in the diagonal shaft is at present hard; and having set a cross-cut, to drive north in the 132, to prove the north, or any other part that may be in that direction, which we shall shortly ascertain; and during the time this work is being done, we have thought it prudent to suspend the shaft; we have six men driving through the great cross-course in the 132 fm. level west, which we find hard and troublesome—water spouting from it in all directions; the 132 north is driving by six men—ground moderate. The 120 fm. level east, on the north part, is driving by six men; the lode is 12 in. wide, producing stones of copper ore; at this point we are daily expecting to communicate to a winze sunk by the former party, which will ventilate the mine, and lay open some tribute ground; the lode in the 120 fm. level south is 4 ft. wide, producing stones of lead. The lode in the 110 fm. level south, together with the stopes in the back of this level, is 5 ft. wide, composed of quartz and stones of lead. On the Flapjack lode, in the 100 fm. level east, we have driven upwards of 40 fms. from the lead course, but as yet no great cross-course; we surely cannot be far from it, seeing they were only 31 fms. apart on the main lode; the ground is still favourable, and the lode 20 in. wide, composed of mundic, spar, and stones of copper ore; we feel anxious to reach the cross-course, and everything is being done that we can do to accomplish it.

KIRKCUDBRIGHTSHIRE.—Captain R. Williams (December 16) reports—The lode in the 50 end, west of Stewart's, is 20 inches wide—spots of lead through it. The 50 end, east of Keith's, coming against the 50 end west, has a similar lode in it. The lode in the 50 end, east of Stewart's, is still large, and occasionally a stone of lead in it; but from its appearance, it is near the black rock which precedes the orey ground in the 30 east. The lode in the winze, in the bottom of the 40, west of Keith's, is 3 ft. wide, with a good rib of ore, worth 16 cwts. of lead to the fm. The lode in the winze, in the bottom of the 30, east of Stewart's, is 15 in. wide, with a small rib of lead mixed with jack, yielding 5 cwts. of lead per fm. We have begun to drive the 30 east again, and the lode seems to be turning more east than it was. The lode in the 20 end east is large, with jack, sulphur, and lead through it, of a coarse quality.

LLAWRCWMBACH.—Captain Matthew Francis (Dec. 18) reports—The engine-shaft is completed from the 6 fm. level to the surface. We shall have about 5 tons of ore ready to sell against the pay. The lode in stoping above the adit is in pretty good ore, yielding nearly 1 ton to the fathom.

PENCRAIG-DU AND CAENANT.—Captain Matthew Francis (Dec. 18) reports—The adit level is driving westward on a course of ore, yielding 1 ton to the fathom. We have about 4 tons of ore broken, and the ore seems very likely to continue westward. At Caenant, the rise is unproductive.

SOUTH WHEAL JOSIAH.—Captain J. Hambly (Dec. 21) reports—I feel great pleasure informing the shareholders in this mine, that I have cut, this week, the Maria great south copper lode east on the bank of the Tamar; this lode has been worked on in Maria about 50 fms. east from where I have now cut it, and sampled from it there; the lode has a very promising appearance, and I expect, in 20 or 30 fms. driving into the hill, which stands 70 fms. high before us, to have a course of ore. Having cut this fine lode here, establishes the first opinion formed of this ground, that it is one of the best new mines in the neighbourhood.

SOUTH WHEAL MARIA.—Capt. George Francis (Dec. 21) reports—The River Tamar being unusually high for the last three weeks, has prevented our keeping out the water—the water-wheel, in the course of this time, being often brought to a standstill. Our men are again at work regular. We continue to drive by the side of the lode in the 20 fm. level, east from the engine-shaft, and, by breaking the foot-wall, we find it contains some good copper ore.

SOUTH WHEAL TRELAWNY.—Capt. W. Lean (Dec. 16) reports—The lode in the 30 fm. level, south of the engine-shaft, is 2 ft. wide, composed of barytes, spar, mundic, soft killas, and spots of lead, with favourable ground for exploring; in the north end, in this level, the lode is still split into branches in the elvan course, but we hope soon to get through it, as we have some blue killas towards the bottom of the level, which is impregnated with mundic, spar, and lead. The water is rather increased, but the engine keeps it in fork at the rate of three strokes per minute.

TAMAR SILVER-LEAD.—Capt. James Sprague (Dec. 18) reports—In the engine-shaft no lode has been taken down since last reported on. In the 175 end south the lode is 1 ft. wide, composed of spar and capel, with spots of ores. In the 160 end the lode is 6 in. wide, rich work. The 145 end is in slidy ground and unproductive. In the 135 end the lode is 3½ ft. wide, orey throughout, and producing work of a good quality. At the north mine, the shaftmen are still engaged cross-cutting west. In the 70 fm. level, north of the shaft, the lode is still about 3 ft. wide, and opening ground that will work at a moderate tribute. Our last parcel of November ores, computed 85 tons, was sold to the Tamar Smelting Company at 19*l*. 11*s*. 6*d*. per ton.

TINCROFT.—Capt. P. Floyd (Dec. 18) reports—At Palmer's the shaftmen are still engaged in cutting plat, &c., in the 90 fm. level. In the 80 fm. level west, on East Pool lode, the lode is worth 7*l*. per fm. for copper. The 70 fm. level west is worth 4*l*. per fm. for copper. We have communicated Stainsby's shaft with the 16 fm. level; the men are now employed sinking below this level. At North Tincroft, the lode in the 100 fm. level east is worth 8*l*. per fm. for copper; the 100 fm. level west is worth 9*l*. per fm. for copper. The 90 fm. level east is worth 23*l*. per fm. for copper; the 90 fm. level west is worth 17*l*. per fm. for copper. The 80 fm. level, east of Willoughby's shaft, is worth 8*l*. per fm. for tin; in the winze, sinking below this level, the lode is worth 7*l*. per fm. for tin and copper; in the winze sinking west of engine shaft, in the bottom of this level, the lode is worth 10*l*. per fm. for copper. On Highburrow lode, the stopes in the back of the 142 fm. level, east of Martin's east shaft, are worth 25*l*. per fm. for tin; the stopes west of Martin's east shaft, in the back of this level, are worth 26*l*. per fm. for tin; east of engine-shaft, in the back of the 142 fm. level, the stopes are worth 11*l*. per fm. for tin. The men are engaged in cutting plat in Martin's east shaft in the 132 fm. level. We have communicated with the winze sinking below the 120 fm. level on Highburrow lode, and have commenced driving east and west in this level; the lode in each end is worth 18*l*. per fm. for tin; the stopes in the back of the 120 fm. level are worth 16*l*. per fm. for tin. On Chapple's lode, in the 100 fm. level, west of downright shaft, the lode is 3½ ft. wide, with good stones of tin and copper ore. In the 90 fm. level west the lode is worth 6*l*. per fm. for copper. The 80 fm. level west is worth 6*l*. per fm. for tin. Blights shaft, on Dunkin's lode, sinking below the 84 fm. level, is worth 8*l*. per fm. for copper. In the 84 fm. level east, on the south lode, the lode is 2½ ft. wide, with good stones of copper ore. Chapple's shaft, sinking below the 72 fm. level, on the south lode, is worth 9*l*. per fathom for copper.

TRELEIGH CONSOLS.—Capt. W. Symons (Dec. 16) reports—In the 113 fm. level, east and west of Garden's, the lode in the east of these ends is about 3 ft. wide, containing spar, mundic, and stones of ore, with a kindly appearance. In the 100, west of ditto, lode 15 in. wide, with good stones of ore—more promising than it has been. In the 90, east of east cross-cut, lode 2 ft. wide, of a promising nature, with good stones of ore; the 90, west of east cross-cut, is holed to the tributers' workings. In the winze below the 90, east of Garden's, lode 3 ft. wide, with stones of ore only. In the 70, west of Garden's, lode 2½ ft. wide, but little ore. In the winze below the 70, west of Garden's, lode 20 in. wide, but little ore. In the 60, west of ditto, lode 10 in. wide, with but little ore. In the 50, west of ditto, lode 2½ ft. wide, rather promising, but not much ore. The cross-cut, south of Wheal Parent, to cut the lode, is driven 3 fms. In the adit east, on the middle lode, lode 14 in. wide, but little ore.

WEST WHEAL JEWEL.—Capt. R. Johns (Dec. 18) reports—The 70 fm level, west of Williams's cross-course, on Wheal Jewel lode, is unproductive. In the 57 fm. level, west of Williams's cross-course, on the same lode, the lode has not been taken down in the past week; in the 57 east, on the same lode, the lode is worth 2*l*. 10*s*. per fm.; in the rise in the 57 fm. level, west of Williams's cross-course, on the same lode, the lode is worth 4*l*. per fm. In the 47 fm. level, west of Williams's cross-course, on the same lode, the lode is unproductive. In the deep adit, west of Hodges's cross-course, on the same lode, the lode has not been taken down in the past week. In the 30 fm. level, west of Quarry shaft, on Tolcarne tin lode, the lode is 20 inches wide, looking very kindly for tin. In the deep adit, west of Quarry shaft, on the same lode, the lode is 2 ft. wide, producing stones of tin. The stopes in the back of the 12 fm. level, east of Pryor's winze, on the same lode, are worth 10*l*. per fm.; the stopes west of ditto are worth 22*l*. per fm.; the stopes west of ditto, in the bottom of the 12, are worth 22*l*. per fm.

WHIDDEN.—Capt. J. Kernick (Dec. 18) reports—The ground in Caunter's shaft is more favourable for sinking. The man-engine will enable us to sink 10 fms. below the deep adit, when we shall require a horse-engine, and it would be proper to be on the look-out for a machine of that sort. There are small portions of tin in the lode at the shallow adit, and the strata about the lode contains more of the light killas, as in the old workings eastward on the back of the lode. I would, therefore, recommend to continue this level eastward with all possible speed.

WHEAL CALSTOCK.—Capt. J Boswarva (18th December) reports—The pitch in the 50 is now in course of working; there is a good leader in the back, averaging 12 in. solid good ore, full 3 tons per fm.—the level is still driving west by the side of the lode. In the course of next week the lode will be cut into. The cross-cut to take a north lode in the 50 is going on fast. In the cross-cut, in the 30, no lode, yet the country abounds in branches, containing ore dropping towards it.

WHEAL MARY ANN.—Capt. P. Clymo, jun. (Dec. 18) reports—The lode in the 50 fm. level, south of the boundary, is 4 ft. wide, and worth 12*l*. per fm.; this level is now under Barratt's shaft, and we have this day put the men to rise against it. We have resumed the sinking of Barratt's shaft, and it is now 2 ft. under the 40 fm. level, where the lode is 1½ ft. wide, and worth 10*l*. per fm.; the lode in the 40 fm. level, south of Barratt's shaft, is 4 ft. wide, and worth 9*l*. per fm.; the stopes, in the back of this level, are producing a fair quantity of lead. Pollard's shaft is sunk 2 fms. under the 40 fm. level, and the shaftmen are altering the pitwork, by fixing a plunger-lift in that level, putting down new rods, &c., &c., which we hope they will complete by the end of this week, when we shall again sink the shaft with all possible dispatch. The lode in the 40 fm. level, north of the shaft, is 2 ft. wide, and worth 8*l*. per fm.; in the same level south it is small and poor. The lode in the 30 fm. level south is 4 ft. wide, and worth 6*l*. per fm.; the lode in the 15 fm. level south is 1 ft. wide, composed of can and barytes.

WHEAL SARAH.—Capt. J. Spargo (Dec. 20) reports—We have cleared up the 20 fm. level, and have set the south end to drive by four men, at 3*l*. 10*s*. per fm.; this end is producing a fair quantity of lead, which appears to be very rich for silver, and, according to the appearance of the lode, and dip of branches connected thereto, we have not many feet to drive before we shall have a great improvement; we have set a tribute pitch to a pare of men in the back of this level, at 10*s*. in 1*l*., and there is not a doubt but they will get fair wages. We have also set a pitch in the back of the 16 fm. level, and are raising a fair quantity of lead—making wages; we have also set a pare of men stoping in the bottom of this level on a lode 2 ft. wide, worth 8*l*. per fm. We have sunk a few feet in the winze, in the bottom of the 20 fm. level, south of the shaft, and have broken solid stones of lead 20 lbs. weight; but the water being fast, we thought proper to abandon it until the water in the shaft is forked to the 30, which is the bottom of the mine; the lode in this winze, although producing rich stones of lead, is somewhat disordered by a slide—therefore I cannot state its value until we sink a fathom or two. Our new wheel-pit, in the the south part of the mine, is built up a sufficient height to take the plevets, axle, &c., which we hope to heave on immediately after Christmas. Our dressing materials, which we purchased at South Havanah, are nearly all on the mine. We shall drop our lift to the bottom in the old mine next week. We have hauled a good pile of lead from the different parts of the mine, which is in course of dressing.

WHEAL TRELAWNY.—Capt. John Bryant (Dec. 19) reports—The lode in the 72 fm. level, north of Phillips's shaft, is still large, and worth three-quarters of a ton of ore per fm.; in this level south there is no lode taken down since my last. The lode in the 62 end, north of this shaft, will produce about 16 cwts. of ore per fm.; the stopes, in the back of this level, are yielding a fair quantity of ore. The ground in Trelawny's shaft, sinking under the 52, is somewhat raised; the lode in the 52 end, north of Trelawny's shaft, is worth 8 cwts. of ore per fm.; the stopes, in the back of this level, are looking pretty well. The stopes, in the back of the 42 fm. level, are producing a moderate quantity of ore. There is no change of improvement in the 22 cross-cut east At the north mine, the lode in the 30 end, north of Smith's shaft, is still of a promising character, and producing stones of rich silver lead ores; the pitches, in the back of this level, are producing a moderate quantity of ore. We sampled a parcel of ore, yesterday, computed 103 tons, for sale on the 27th inst.

WHEAL TRESCOLL.—Captain J. Webb (Dec. 20) reports—Our B lode is much improved since my last report; in the end going west there is a fresh course of tin rising from the bottom of the level, worth 30*l*. per fm., and we have gone over it several fathoms in length; the end going east has been in an elvan on the cross-course this last week past, but the lode has gone through it, and is very good for tin. I expect to have a better course of tin in this end than we have as yet seen, from the tin gone down from the level above. The water has abated in our south cross-cut, and I shall put some men to cut the lode, which is not more than 3 ft. from the present end; and, from the body of water proceeding from it, we expect it to be a large lode, and, from the appearance of the lode, when cut, in the shaft, there will be tin in it. We are now greatly in want of more stamping power, as we can raise quite sufficient tin-stuff to keep 48 heads of stamps going. When these number of heads are at work, we shall be able to make a large profit.

WHEAL VINCENT.—Capt. J. Spargo (Dec. 20) reports—The weather has been favourable for the last day or two, so that we have been able to get on well with the lobby to the wheel-pit; we have also completed a great part of our leats. Our dresser has cleaned up several hundreds of tin, a great part of which was broken from the new lode, which is of a most excellent quality. The ground in driving on the north branch of the south lode is favourable; we have 3 fms. to drive to intersect the lode; the north branch carries a little tin, which is, of course, a good feature, and lead us to believe the lode, when cut, will produce good work, as we are certain of a course of tin having gone down in the bottom of the old workings not many fathoms before us. I am anxious to see this lode cut, and am using every effort to do so; we have six men here—so that they are constantly working night and day. We have pumps and all other materials on the mine (with the exception of a capstan rope and flat-rods) to complete our machinery, so as to prove the mine effectually. Our other work is going on satisfactorily, and, if the weather continues favourable, we shall soon complete our machinery.

ACCIDENTS.

Dreadful Accident.—On Tuesday last, Joseph Treherne, a workman at the Melyngrythan Chemical Works, Neath, fell into a still of scalding vitriol, up to his waist, and now lies in a state of dreadful suffering.

Oldbury.—W. Brazenhall was frightfully injured by a fall of coal while working in Messrs. Spittle and Haines's Colliery.

Dudley Port.—J. Ducey, aged 12, was killed by a fall of coal at Mr. Giles's Brooch Colliery

Middleton Quarry, near Belford.—A large block of stone, intended for the bridge over the Tweed, at Berwick, was being raised and shifted by means of the crane, which eight men were working, when the stone weltered in the chain, and brought down, with a tremendous crash, the timbers of the crane, by which T. Bell had an arm broken, and J. Hood received three lacerated wounds of the scalp.

Chambers's Colliery, Maubro'.—As J. Muscroft, one of the underground workers, was incautiously pursuing his employment, without the roof being properly secured, a mass, weighing 5 tons, fell upon him before he could escape. The fall missed his head, but completely covered his body, and before he could be extricated life was extinct.

Wren's-nest Hill Stone Quarry.—J. Lovell, a poor stone getter, was dreadfully crushed by a fall of stone.

Eagle Colliery, Rowley.—W. Parkes had his right foot frightfully crushed (among other injuries) by a fall of coal.

Dudley.—T. Ashfield was badly injured by a fall of stone at Haden Hill Collieries.—T. Greenfield sustained a severe fracture of his right leg by a fall of coal at Woodside Colliery.—H. Goodhead, a "bandsman," was dreadfully injured by a similar occurrence—little hope is entertained of the recovery of either.—W. Amsbury was severely injured by a fall of coal at Messrs. Blackwell's Dock Colliery.

THAMES TUNNEL COMPANY

The number of passengers who passed through the Tunnel in the week ending Dec. 16, was, No. of passengers, 15,468.—Amount of money, £64 9*s*. 0*d*.

Proceedings of Public Companies.

MEETINGS DURING THE ENSUING WEEK.

WEDNESDAY ..South Wheal Tolgus Mining Company—at the mine, at Twelve.
THURSDAY.....Canada Company—offices, at One.
Sambre and Meuse Railway—London Tavern, at One.
Direct London and Exeter Railway—George and Vulture Tavern, One.
FRIDAY .....Balleswidden Mining Company—at the mine.
South Australian Company—offices, at One.

MENDIP HILLS MINING COMPANY.

A special general meeting of shareholders in this company was held at the offices, Finsbury-square, yesterday, for the purposes of taking into consideration an agreement provisionally entered into by the directors, for the leasing of some slag ground adjoining that at present worked by the company, and of confirming the same, or otherwise.

E. H. BARWELL, Esq., in the chair.

The notice convening the meeting having been read, the CHAIRMAN observed, that he was sorry to see so few shareholders present, particularly as certain matters had to be decided of considerable importance; he hoped, however, that the course they took would be the right one, and that it would prove advantageous to the interests of the company. With respect to the past operations of the company the directors had nothing to conceal; they were fully aware of the hopes held out at the last meeting, that no further calls would be necessary, and of the disappointment occasioned by the necessity of making two since. He then entered into a statement of the extra expences which had unavoidably been incurred, from extensive breakages of the leats and launders, and that during their repairs they were unable to continue operations; all these circumstances had increased their expenses and lessened their returns, and had obliged them to call upon the shareholders. Further operations in the slag department had also been necessary, and they were obliged to keep a certain number of men at work on the mines under forfeiture of lease; they, therefore, thought it a dereliction of the duty they owed the shareholders to relinquish the property; they had, therefore, opened more ground, erected a steam-engine, fan blast, &c., for smelting, and the property was now in a very satisfactory state.

Mr. GOSLING read the agreement as entered into by the directors with Mr. Somers; they were to have a 21 years' lease of slag ground adjoining, called Ubley Warren, Stevens's, and Blackmoor, at a royalty of 1-15th; to pay to Mr. Somers 100*l.* a year for seven years, in consideration of buildings, machinery, &c., already erected; for annulling the clause in former lease, of keeping a certain number of men at the mine department; and for water, &c., the company being bound to keep in good condition certain fences.

The CHAIRMAN explained, that keeping those men alone would cost 140*l.* per annum. There was water in the new ground, and from the great facilities which it offered for working, they were very sanguine that their future operations would be highly successful.

A lengthened conversation ensued of no public interest, from which, however, it was elicited that there was every probability of getting into full operation by Midsummer next. It was then resolved, "That this meeting approve of the agreement entered into between the directors and Mr. Somers, now read and submitted to the shareholders, for taking a lease of the Ubley Warren Slags, and certain slag-ground adjoining or near to it, and do accordingly sanction such agreement, and authorise the committee of direction to accept a lease from Mr. Thomas Somers, in conformity therewith."—A vote of thanks was then passed to the chairman and directors, and the meeting separated.

CARADON UNITED MINING COMPANY.

At a meeting of adventurers, held yesterday, at the offices, St. Michael's-alley, Cornhill—WILLIAM A. THOMAS, Esq, in the chair—the minutes of the last meeting having been read and confirmed, it was resolved—that the engine-shaft be sunk, to see the lode at deeper levels, and that Capt. Penrose be requested to confine his operations to sinking the shaft, according to the suggestions of Mr. Hitchins in his report, which was read.—That 19-256th shares having been relinquished to the company, the same be sold to the present proprietors by tender, at a price not less than 3*l.* per share, and that to carry out the operations recommended by Mr. Hitchins, the shareholders be requested to pay up their calls immediately. In Mr. Hitchins's report, above referred to, he gives his reasons for recommending the sinking the shaft deeper, from the improved appearance of Morshead's lode in the 38 to what it was in the 28 fm. level.

CONDURROW MINING COMPANY.

At a two-monthly meeting of adventurers, held at the mine on the 19th inst., the accounts were examined and passed, showing—Labour cost Oct. and Nov., 920*l.* 16s. 5d.; merchants' bills, 273*l.* 3s. 1d.; lords dues, 44*l.* 11s. 9d.; balance due to purser end of September, 302*l.* 13s. 5d.=1541*l.* 4s. 8d.—By ores sold, 891*l.* 15s. 7d.; estimated value of tin, 360*l.*, leaving balance against the adventurers, 289*l.* 9s. 1d. The following report, from Capt. N. Vivian was read:—

December 19.—The lode in the 70 fm. level east continues large and productive for tin; at this point, however, it is not so valuable as it has been from the shaft generally; the backs will no doubt be all taken away in process of time to the 60 fm. level. In the winze under the 60 fm. level, 4 fms. beyond the end of the 70 east, the lode is large and very promising, and worth at least 15*l.* per fm. for copper ore. The 70 west has been productive for ore, and yielded in driving, 30 tons, worth 7*l.* per ton; the ore held only to the back of this level, and in stoping the same, we have there found it good for tin; there is a winze holed from the 60 to the 70; the sump is sunk 2 fms. below the 70, the lode in the same is large and promising, yielding tin-stuff, and from the appearance of the lode east and west of the shaft, we may reasonably hope for a considerable improvement in sinking to an 80 fm. level. We have just finished fixing a plunger at the 70: our mine from the surface is 120 fms. deep, drained by three plunger-lifts. The ore ground in the 60 east came in 14 fms. beyond the winze just referred to, and continued (that is to say the best bunch) 8 fms. in length; we hope that as this is the coming in of the ore, we may find it of greater length downwards; the 60 east is promising, with good stones of ore, and a large lode. The 60 west and 50 west are promising, but poor. We have five parties of shaftmen engaged in sinking three shafts. The shafts (Hope's) in which three of the parties are engaged in sinking under the 20, and rising above the 40 and 50 fm. levels, will be finished, we expect, before the end of the ensuing month, and they will then be put to drive the 20 and 30 fm. levels into the old mine, which may be accomplished in two or three months: that done, we may hope to derive some assistance from that part of the mine. We had a more favourable report of the part in question than of the part we are now working, but about this I offer no opinion. The deep adit, driving west on Llandow'r lode, is yielding about four tons of ore per fm; the Llandow'r shaft is 8 fms. to the west of this end, and as deep as the adit within 6 fms., it may be holed in course of four months, the ground on this lode is hard; the pitches in the different levels on the same are as usual, productive; but the very low standard has so disappointed the tributers, that they do not raise so much ore as might otherwise be realised. Woolf's shaft is being secured from the surface preparatory to working the old mine. We have found it very expensive in timbering, being obliged to close bind it with stout timber, but it is almost accomplished, and we shall proceed with cleaning the shaft in firm ground; this will be a valuable shaft as a whim-shaft to the eastern part of the mine.

EAST CROWNDALE MINING COMPANY.

The annual meeting of shareholders was held on Wednesday, the 20th inst., G. THOMAS, Esq., in the chair.

The notice convening the meeting, and the minutes of the last annual meeting, having been read and confirmed, the following report of the directors, and statement of accounts, were read:—

December 20.—Since the last annual meeting the shaft, on the copper lodes, has been sunk to 58 fms., and the main lode intersected at that depth; after driving 7 fms. west, and 3 fms. east on that lode, and having also cut the north lode, the operations were suspended, in consequence of the lode not being sufficiently productive with the very low standard of copper to induce their further prosecution with any reasonable hope of immediate advantage to the adventurers, and in order that the operations on the tin lodes, where success appeared to be certain, might be prosecuted with increased vigour, without the costs pressing more heavily on the adventurers. In July last the works on the copper lode were, therefore, stopped; the committee trust, however, that hereafter they may be resumed, the great productiveness of the old (or West) Crowndale Mine formerly being a matter of notoriety, and the powerful steam-engine and pitwork being in this place to enable this part of the company's sett being in fork, and in course of working in a fortnight after again putting the engine to work. On the 20th July 20 tons 9 cwts. of copper ore were sold, and produced 60*l.* 15s. 11d. At Rix Hill, on the tin lodes, where most satisfactory evidence continues to be seen that they will, with judicious and intelligent management, prove very remunerative, the operations, during the whole of the year, have been unremittingly pursued, and the lode (since called Thomas's) intersected; this lode has been extended on in the adit level, from the cross-cut at Harris's shaft, on the course of the lode, about 30 fms. of which about 25 fms. have been very productive, the end varying from about 20*l.* to 50*l.* per fm. This promising and yielding lode, which varies in size from 4 to 16 ft., and is easy to drive, has been seen in Thomas's shaft, a distance of about 18 fms. from the present end; driving from Harris's and also in Diamond's shaft, about 45 fms. west of Thomas's; the lode in both of these shafts is highly promising, and affords indications of equal productiveness, as in the present end driving from Harris's shaft, and stamps considerable value upon the undertaking.

The back of the adit has been stoping for many months; and the value of the stopes has varied from 10*l.* to 30*l.* per fm. Several other tin lodes exist in the immediate vicinity, and add greatly to the prospects of the mine, and warrant the anticipation of a profitable concern without any further outlay from the adventurers. These lodes will, in due time, be developed, and a 10 and deeper levels driven under the adit, when successful results, to a much greater extent, may reasonably be expected than those at the adit level, and from the ground, or stopes, above. The adit, on the course of Thomas's lode, will be driven to Thomas's shaft, and a rise from thence effected to hole that shaft; a considerable saving in drawing and cartage will then be effected, as the stuff will be then drawn at Thomas's, instead of Harris's, as at present, and thence, by a small train, at once carried quickly and economically to the stamps.

Statement of Accounts for the year ending 30th November:—

Expenditure (including cost of steam-engine and stamps)			£5475 15 0
Receipts—Three calls of 10s. per share	£3072	0 0	
Tin sales	61	15 11	
Copper ore sale	415	4 7—3549	0 6
Leaves			£1926 14 6
To which add balance against the company last year	£116	19 9	
Calls due on 40 forfeited shares	150	0 0— 260	19 9
Makings total of			£2187 14 3

Debts £ 897 17 4 due W. West, in July, 1849, for engine, &c., at Rix Hill.
" 1289 16 11 for November costs, merchants' bills, and loans.
£2187 14 3

Towards meeting these debts, a call of 10s. per share was made on 13th inst., payable on the 3d Jan. next. The engine (to which 12 stampe' heads are attached, but which, during dry weather, can only partially work) started on the 19th July, since when one sale of tin has taken place—viz.: 7 tons 16 cwts. 2 qrs. 27 lbs., at 46*l.* per ton, 360*l.* 10s. 1d.; 1 ton 5 cwts 3 qrs. 20 lbs., at 24*l.*, 31*l.* 2s. 3d.; 17 cwts. 1 qr. 27 lbs., at 27*l.*, 23*l.* 12s. 3d. This sampling took place on the 31st October, and produced 415*l.* 4s. 7d. This sale was of burnt or calcined tin—Mr. Diamond, the purser, having obtained the temporary use of Wheal Friendship house, and by this step secured an increase of value of about 120*l.* beyond the amount the same quantity of stuff would have realised, if it had been sold unburnt, after allowing for the heavy cost of carriage (15 miles there and back), putting the building in repair, and other charges. By this time, another sale of about 400*l.* worth of tin might have been made, and regular sales for the future depended on, at the rate of 300*l.* per month, if claimed, with the present stamping power, and occasional inefficient supply of water, had the committee been enabled to complete the arrangements of a burning-house. The committee, by the terms of the lease, are prohibited from erecting a house on the mine for calcining the tinstuff; but they expect shortly to meet with a suitable spot on reasonable terms.

It is, however, under the delay occasioned for want of a burning-house, a debt has accumulated, and the call in question has become unavoidable; this the committee hope will be promptly responded to, and the liabilities being thus diminished, the committee anticipate early profits will accrue to the adventurers. The costs to this time include considerable dead work, such as sinking shafts, driving cross-cuts, extending dressing-floors, &c. Capt. Stephen Paull's weekly reports, which appear regularly in the *Mining Journal*, afford every information respecting the mine. Mr. Brightman, the chairman, of the committee, from the commencement of the undertaking, and Mr. F. Chambers, a member of the committee, retire by rotation, and, being both eligible, are recommended by the committee for re-election. The committee, in conclusion, wish to record the sense they entertain of the zealous and useful services of the purser and captain on the mine.

EAST WHEAL JOSIAH MINING COMPANY.

An adjourned meeting of adventurers was held at the offices, Tavistock, on Friday, the 15th instant.—Mr. T. NICHOLLS in the chair.—The accounts and vouchers were examined and passed, showing a balance of 8*l.* 15s. 11d. against the company, to discharge which a call of 2s. 6d. per share was made.—The services of Mr. W. E. Cummins having been taken into consideration, 1*l.* 1s. per month was allowed him for keeping the accounts.—The following report, from Capt. W. Richards, was read to the meeting:—

Dec. 15.—Since the general meeting, held the 29th of September last, the adit level has been driven in all 25 fms. on the course of the lode, which varies in size from 2 ft. to 4 ft. wide, composed of peach, mundic, spar, and prian, with excellent gossan in places; the lode, however, has more particularly improved for the last 12 fms., being from 2 ft. to 2½ ft. wide, for the most part gossan, with abundance of mundic. In conclusion, I beg to say, the prospects of this concern are such as to warrant the required outlay for its further prosecution.

STRAY PARK, CAMBORNE VEAN, AND WHEAL FRANCIS MINES.

At a general meeting of adventurers, held at the mines, on the 15th inst., the accounts for Sept. and Oct.—showing balance in favour of adventurers of 899*l.* 8s. 7d.—having been examined, were allowed, and a dividend of 10s. per share declared—leaving now in hand 399*l.* 8s. 7d.

Statement of Profit and Loss to end of October:—

Tutwork cost, September and October			£567 6 2
Merchants' bills, September and October			254 2 10
Tribute pay on ores sold 3d of October	£355	5 10	
Subsist advanced on ditto	395	12 0	
Lord's dues payable on ditto	92	11 4—843	9 2
Twelve months' cost in Wheal Francis, to 30th of October			310 4 2
Balance			899 8 7
Total			£2874 10 11
Dec. 15—To dividend of 10s. per share			£500.
Balance in hand Sept. 1			£631 8 2
Copper ores, Oct. 3, 509 tons 18 cwts.			2221 13 5
Tinstuff			21 9 4
Total			£2874 10 11

Balance in hand, Nov. 1, 829*l.* 8s. 7d.

Average getting of miners in Sept. and October months:—Tutworkmen, 2*l.* 12s. 6d. per month; tributers, 2*l.* 0s. 6d. ditto.

The following report, from Capts. R. Eustice and E. Ralph, was read:—

Dec. 15.—In the winze, sinking below the 70 fm. level, the lode is 18 in. wide, yielding 2 tons of ore per fm. In the 80 end, driving west, in Wheal Francis, the lode is 1 foot wide, yielding 1 ton of ore per fm. In the 90 end, driving west, in Wheal Francis, the lode is 2 ft. wide, yielding 2 tons of ore per fm. In the winze, sinking below the 90 fm. level, the lode is 2½ ft. wide, yielding 5 tons of ore per fm. In the 100 end, driving west, the lode is 2 ft. wide, yielding 2 tons of ore per fm. In the rise, above the back of the 100 fm. level, the lode is 2½ ft. wide, yielding 5 tons of ore per fm. In the winze, sinking below the 100 fm. level, the lode is 2½ ft. wide, yielding 6 tons of ore per fm. In the 110 end, driving west, the lode is small and unproductive. In the 120 end, driving west, the lode is 2 ft. wide, yielding 2 tons of ore per fm. In the 150 end, driving west, the lode is 1½ ft. wide, yielding 1½ ton of ore per fm. In the 180 end, driving east, the lode is 3½ feet wide, yielding 3 tons of ore per fm. In the 180 end, driving west, the lode is 2½ ft. wide, yielding 4 tons of ore per fm.; this 180 fm. level is considerably improved, both east and west, since our last report, and it now bids fair to become a permanently profitable part of our workings. In the cross-cut north, at the 56 fm. level, we have intersected the Town lode, but, owing to its being mixed up with the cross-course, we can say but little respecting either its nature or size. In the course of another week we shall have opened on it east and west, and then it will show itself more distinctly. In the cross-cut driving south, at the 56 fm. level, in Wheal Francis, we have not yet intersected the lode, but have indications of being very near to it. The tribute ground throughout the mine looks very well, and all we have to complain of is the lowness of the standard.

SOUTH ROSKEAR MINING COMPANY.

At a meeting of the committee of management, held at Matthews's Hotel, Camborne, on Tuesday, the 19th inst., Mr. Stokes's statement of costs in the several suits against defaulters for calls having been presented, the following report was made by the committee:—

The committee report that the following shares have been sold by decree of the Vice-Warden, and that the sums set opposite thereto have been realised by such sales:—

	No. of shares.	Debts.	Amt. realised at sale.	Cost on sale.
Mr. William Davey's	10	£560 8 5	£260 0 0	£22 15 0
Mrs. Wade's	2	112 1 11	45 0 0	16 7 2
Mrs. Helen Gilbard's	2	112 1 11	46 0 0	18 2 2
Mr. H. Gilbard's executors	2	112 1 11	50 0 0	19 0 4
Mr. Hector Matben's	2	87 1 11	46 0 0	17 19 0

Leaving still due on the above shares:—Mr. Davey's, 323*l.* 3s. 5d.; Mrs. Wade's, 83*l.* 9s. 1d.; Mrs. Gilbard's, 84*l.* 4s. 1d.; Mr. Gilbard's executors, 81*l.* 2s. 3d.; Mr. Matben's, 59*l.* 1s. 9d.=631*l.* 0s. 7d.

There are two shares now standing in the name of Lieut. Binney in the Cost-book, who has been dead upwards of 12 years, and Dr. Binney, of Newbury, Berkshire, has been communicated with, and has consented as the personal representative of the deceased, to transfer the shares to any person, on being indemnified from the back cost, which to the end of January last, amounts to 112*l.* 1s. 11d. The committee recommends that the purser be instructed to sell the said two shares to any person who is willing to give 25*l.* each for the same, the purchasers paying the cost divided since January last.

There are four shares now standing on the Cost-book in the name of John Fillis's executors, the amount of cost due on which to the end of January last, is 224*l.* 3s. 9d.; the committee cannot discover who these executors are, and recommend that if the purser can find any person willing to take those shares on their own responsibility, and subject to the right of the executors of the said John Fillis at the rate of 20*l.* per share, adding thereto the cost divided since January last, that he be authorised to do so, and to permit such purchaser to sign the Cost-book for those shares, on the above terms.

In case the shares are sold and disposed of in pursuance of the foregoing recommendations, there will then be due on these shares, and the shares already sold, the following amounts—viz.:—On shares sold as before stated, 631*l.* 0s. 7d.: on Lieut. Binney's two shares, 62*l.* 1s. 11d.; on John Fillis's executors' four shares, 144*l.* 3s. 9d.=837*l.* 6s. 3d.—To this must be added the solicitor's cost, beyond the amount of taxed cost charged in the respective suits, amounting to 37*l.* 13s. 9d.—making total, 875*l.*, which sum the committee recommend should be, at the next account, divided on the Cost-book amongst the remainder of the old shareholders, representing 92 shares.

The committee recommend that the decree, as regards the balance of costs, be immediately put in force against Mr. W. Davey, Mrs. Helen Gilbard, Mr. H. Gilbard's executors, and Mr. H. Matben, or such other steps be taken against them as may be deemed most expedient for its recovery. That as regards the balance of cost on the other shares, the committee conceive it will be useless to attempt to recover any part of it, and recommend that no expense be incurred in relation thereto. That the said cost of 875*l.* although divided, be not collected until it be definitely ascertained what amount can be recovered under the former recommendations. The committee hope that previous to the next account the chief part of the remainder of arrears of cost will have been collected, and at such account, they will be prepared with a full statement of the accounts generally.

WEST UNITED HILLS MINING COMPANY.

An adjourned meeting of adventurers was held, at the Queen's Arms Hotel, Cheapside, on Monday, the 18th instant,

THOMAS CAMPLIN, Esq., in the chair.

The cost-book having been transmitted from Cornwall by the purser, as also the cost sheets and vouchers, with the banker's book, were laid on the table.

The CHAIRMAN read the minutes of the last meeting, with the accounts then rendered by the committee, which were admitted. A letter from the purser was then read, stating that of the amount due on the audits of the accounts at the preceding meeting, 120*l.* had been paid by him to the credit of the adventurers with the bankers of the company, and that a further sum of 30*l.* had been received on account of calls. The October and November costs, which were submitted, amounted together to 84*l.* 7s. 2d., which it appeared the purser undertook to liquidate, and thus balance the account, or nearly so, with the adventurers. It appeared from the statement of accounts, that at the last meeting it was agreed that 153*l.* 16s. 7d. was due from the purser, to which was to be added 30*l.* call received, and 19*l.* 14s. 2d. due to the bankers, allowed on account. The arrears due by shareholders were 328*l.* 2s. 6d., out of which sum 82*l.* 0s. 5d. would be required, with the balance due by the purser, to discharge the entire claims on the mine, leaving about 240*l.* in favour of adventurers, to prosecute the future operations.

Mr. CRAFT (of Haymarket) observed, that he understood there was a difference existing as to a former balance brought forward, which was explained by Mr. English, who had been nominated as a member of the committee; but, in deference to that gentleman, it was proposed that Messrs. Edwards, Nicholson, and English be requested to examine and report upon the same.

Little or no business was entered into beyond the accounts, the operations at the mine appearing to be insignificant in their nature, and no determination arrived at, in the absence of funds, as to the future workings; but we presume an early meeting will be convened—that under notice being attended by only some two or three proprietors.

A considerable time was occupied in discussing a subject of which the adventurers have, we may say, become tired, if not disgusted—the conduct and misrepresentations made by Mr. Paul Rabey, jun., to a lady at Taunton, whereby something like 200*l.* was obtained. We cannot follow the statements of Mr. Gray, who represented the lady in question, nor the observations of the chairman: but we may say, that only one opinion was expressed and, as we believe, entertained of the gentleman in question.

After some ordinary business, and instructions being given to the purser to proceed against the shareholders in arrear, or to place their names in the merchants' hands, to recover any claims on the mine, and the thanks of the meeting being given to the chairman, the meeting adjourned.

[We would recommend, in all cases like the present, where parties will not pay their calls, that their names be advertised; it would have the effect of not only guarding merchants and adventurers from having any thing to do with them, but the bare apprehension of seeing their names in the Mining *Gazette*, would, we think, induce them to act honestly.]

WHEAL RUSSELL MINING COMPANY.

A general meeting of shareholders was held at the Mining offices, Tavistock, on Friday, the 8th inst.—J. H. HITCHINS, Esq., in the chair.—The usual preliminaries having been gone through, it was resolved,—That the sinking of the engine-shaft be proceeded with, and a water-wheel erected immediately, and that the wheel now lying at Coombe Vale be purchased, at the sum of 90*l.*, and that a call of 10s. per share be made.—Balance due to adventurers to end of April, 310*l.* 10s. 7d.—Costs for six months, to Oct., 38*l.* 10s. 8d.; calls on 34 shares relinquished, 48*l.* = 223*l.* 19s. 11d.

The following report, from J. H. Hitchins, Esq., and Capt. A. Barratt, was read to the meeting:—

Dec. 8.—The adit level on the course of the lode has been extended from the first point of intersection therein for about 20 fms., and, for the most part, showed a lode of a very encouraging appearance in places, altogether from 3 to 4, 5 and 6 ft. wide; and from the leader of which, there have been excellent stones of copper ore produced, some of which (the produce of the present end) are now before the meeting. The lode in the present level is altogether more than "end" big, composed, on the foot wall, of a very regular leader, about 2 ft. in width, containing flookan, fluor-spar, mundic, and producing very good stones of ore; in evidence of which, the meeting is again referred to the produce on the table. There is no hesitation in saying, that enough has been shown of the lode in driving, to fully justify the required outlay for its prosecution at greater depth; for which trial there is available, in the readiest and quickest manner possible, adequate water-power; in a word, the suggested trial should be at once undertaken. There has also been an engine-shaft sunk from the surface, and made to communicate with the adit level, but which cannot, owing to too much of coming water, be expected to be sunk more than a few fathoms below its present point of progress, which is about 5 ft. below the bottom of the adit level, until the engine is erected.

WHEAL SETON MINING COMPANY.

The usual two-monthly meeting of adventurers was held at the mine, on Monday, the 11th inst., when a dividend of 10*l.* per share was declared, and a balance of 710*l.* 8s. 8d. carried to the next account.—Mr. Tilly having laid before the meeting the correspondence between the agents of the mine and Mr. W. H. Vice, respecting certain timber sent to the mine, the refusal of the agents to accept which was approved of, and the purser directed to defend any proceedings which may be instituted against the adventurers for its payment.—The following is the statement of accounts for Sept. and Oct.:—

To amount of cost for September			£1350 1 3
Ditto ditto			1032 16 5
Foundry and merchants' bills			1034 14 0
			£3417 11 8
Aug. 31—By copper ore sold			£1521 12 1
Oct. 5— Ditto ditto			3470 2 6
			£4991 14 7
Less 1-15th lord's dues			332 15 7 — 4658 19 0
Balance			£1241 7 4
Balance of last account			459 1 4
			£1700 8 8

By dividend, at 10*l.* per 99th share, 990*l.*—leaves balance to next account, 710*l.* 8s. 8d.

The following report, from Capts. P. Rabey and S. Lean was read:—

December 11.—The ground in the north cross-cut, in the 100 fm. level, from Bull's shaft, is hard for driving; Bull's sumpmen are cutting a plat in the 100 fm. level, preparatory to sinking below that level. In the 90 fm. level west, on the north caunter, we are carrying about 5 feet of the lode, which at present will produce about 3 tons of ore per fathom—the principle part of the lode is standing to the south. In the 80 fm. level west, on ditto, we are driving on the north part of the lode, which is 5 ft. wide, and will produce 10 tons of ore per fathom; the stopes in the back of this level will produce 15 tons of ore per fm. In the 70 fm. level west, on ditto, we are carrying about 6 ft. of the lode, which will produce 10 tons of ore per fm.; the stopes in the back of this level will produce 14 tons of ore per fm. In the 60 fm. level west, on ditto, the lode in the present end is 1 ft. wide, but the principal part of the lode is to the south, and we are driving to cut it; the boundary winze, sinking below this level, is down 9 fms., sunk on the south part of the lode, which is 4 ft. wide, and will produce 6 tons of ore per fm.—this is 3 fms. to the south of the lode, in the 70 fm. level; the stopes in the back of this level will produce 15 tons of ore per fm.; in the 60 fm. level, east of Tilly's shaft, on ditto, the lode is 9 ft. wide, and will produce 10 tons of ore per fm.; we have commenced sinking a winze below this level—lode 10 ft. wide, producing 12 tons of ore per fm.; in the 60 fm. level west, on ditto, lode 5 ft. wide, with spar, mundic, and ore. In the winze sinking below the 50 fm. level, west of Tilly's cross-cut, on ditto, lode 2 ft. wide, unproductive, down 9 ft. In the 80 fm. level west, on the south caunter, lode 3 ft. wide, spar, and ore. In the 70 fm. level west, on ditto, lode 2 ft. wide, containing stones of ore. The stopes in the bottom of the 60 fm. level west, on ditto, will produce 5 tons of ore per fm. In the 90 fm. level west, on Kuebone's branch, the lode is 4 ft. wide, and will produce 3 tons of ore per fm. The 80 fm. level west, on ditto, is suspended; in the 80 fathom level west, on the middle branch, the lode has fallen in with the north caunter. The 60 fm. level west, on this branch, has been communicated with the 60 fm. level east in the past week, the lode in both ends, for the last 2 fms. driving, will produce 3 tons of ore per fm. Tilly's shaft is sunk to the 70 fm. level. We are driving south to cut the north caunter, which we expect to do in about a month. In the 60 fm. cross-cut, north from Tilly's shaft, the ground is a great deal more favourable for driving. Harvey's shaft, sinking below the 34 fm. level is suspended, in consequence of an increase of water, and the men are driving the 44 fm. level west, on the same lode, to get under the shaft—there is about 6 ft. further to drive, when we shall rise to effect a communication. Cook's engine-shaft is sunk to the 54 fm. level, ground favourable; we are cutting a plat to enable us to sink below that level. The ground in the north and south cross-cuts, in the 44 fm. level, is rather harder for driving than when we last reported.

WHEAL TREMAYNE MINING COMPANY.

At a two-monthly meeting of adventurers, held at the offices, George-yard Lombard-street, on the 15th inst.—THOMAS FIELD, Esq., in the chair—the statement of accounts was examined and passed, showing—Labour cost for September, 814*l.* 10s.; merchants' bills, 277*l.* 11s. 7d.; labour cost for October, 858*l.* 6s. 8d.; merchants' bills, 252*l.* 8s. 2d.=2022*l.* 16s. 5d.—By sale of copper ore, October 12, 87 tons 0 cwts. 2 qrs. = 254*l.* 14s. 6d.; November 9, ditto, 69 tons 14 cwts. 2 qrs. = 198*l.* 13s. 4d.; by sale of black tin, October 21, 5 tons 2 cwts. 1 qr. 26 lbs. =220*l.* 1s.; ditto, Nov. 24, 16 tons 4 cwts. 3 qrs. 13 lbs. = 758*l.* 13s. 6d.; ditto, Nov. 29, 7 tons 11 cwts. 2 qrs. 19 lbs. = 349*l.* 14s. 6d.; ditto, Dec. 13, 8 tons 4 cwts. 3 qrs. 4 lbs. = 394*l.* 3s. 7d.; by arsenic, Nov. 29, 85*l.* (less lord's dues, 72*l.* 2s. 3d.) = 213*l.* 18s. 2d.; by West Wheal Providence water carriage, 24*l.*; carriage of tin, 20*l.* 9s. 6d.; debts received, 4*l.* 17s. 3d.—leaves balance against the mine of 14*l.* 11s. 6d.; to which add balance of last account, 153*l.* 16s. 5d., shows a total balance of 168*l.* 7s. 11d. It was resolved, that Mr. Bennett's proposed relinquishment of his 44 shares not having been carried into effect, and having requested to withdraw his request, the same be agreed to, and that the secretary be instructed to apply for immediate payment of all arrears of costs due.

The agent's report was read, which stated that, in the 50 fm. level, west of Maddern's shaft, on the south lode, the lode is 1 ft. wide, opening tribute ground; in the 50 fm. level east the lode is 8 ft. wide, moderate work for tin; there is one pitch in this lift set at 6*s.* in 1*l.*, and can set several more, when required, for the stamps. In the 40 fm. level west the lode is 9 in. wide, poor at present; in the same level east the lode is 2 ft. wide, moderate work for tin. In the 30 fm. level, west of Field's shaft, on the south lode, the lode is 3 ft. wide, producing 3½ tons of copper ore per fm.; we have five pitches here—four at 5*s.*, and one at 6*s.*, in 1*l.*; this part of the mine looks very promising indeed. In the 53 fm. level, west of Pollard's shaft, on the engine lode, the lode is 1 ft. wide, producing good work for tin. Upon the whole, the prospects of the mine are very good.

[From the *Plymouth Journal.*]

PLYMOUTH WHEAL YEOLAND.—In driving to cut the lode in the 34 fm. level, the heave occasioned by the slide appears to be much greater than was anticipated, the lode not having been intersected. The new south lode is without alteration, the sump is rather more than 10 fathoms deep.

PLYMOUTH WHEAL YEOLAND EAST.—In clearing this adit a part of the lode left by the ancients has been found standing on the north side of the level, the part left is apparently about 4 ft. wide, and producing tolerably good work for tin—it would be premature to say anything further for the present.

WHEAL ASH.—The plat in the 15 fm. level under the adit is being cut. No part of the lode has been taken down, but this will be done, and the south wall seen in about 10 days, after which the sinking of the shaft will be resumed.

WHEAL FRANCO.—The lode in the 62 fm. level has not been cut, the end of the 47 is in the cross-course passed through the 32 fm. level, on the eastern side of which there was for 32 fathoms in length a very good course of ore—the other parts of the mine are without alteration.

WHEAL RUSSELL is situated at the left bank of the Tamar, a little below the Weir-Head. It was wrought some time since; the resumed working is on a lode 20 fms. to the north of the old lode; the lode is 9 feet wide, and composed of gossan, sugary spar, mundic, and some ore.

OKLE TOR.—This is within the old Trelawny Consols set; an adit was commenced here some two or three years since, and some good stones of lead were then raised. A large lode has been cut, composed of white prian and good stopes of lead. The lode runs north and south.

WHEAL CALSTOCK.—The cross-cut in the 50 fm. level, driving north, is within 3½ fms. of the place at which we expect to cut the lode, and the killas is very congenial for making

ore; in the western end, at the same level, the lode is large and grey, about 4 ft. of it is carried in the level. A branch of mundic and peach is dropping into the lode from the south; the pitch, which is in a large and productive lode, has not changed within the week.

South Wheal Josiah.—In shoding, several large lodes have been cut; one is of considerable promise, and has been productive; on the other side of the river, a cross-cut from the Tamar, in Wheal Maria, is now being driven toward it.

Birch Tor and Vitifer.—New life has been infused into these mines since the meeting of the 7th inst. Active preparations are being made to clear up the shaft on the old Vitifer lode by the middle of January, near this desirable object, the attainment of which has to the former and present adventurers, caused on outlay of not less than from 7000*l.* to 8000*l.* will be accomplished. The cross-cut north to intersect a lode on which the ancients have done much, but which has not been seen at the adit level, will be commenced very shortly—all here is activity, and is the cheerful activity engendered by confidence in successful results.

Hawkmoor and the Clitters.—In the winze below the bottom level there is a branch of copper. Enough has been seen here to warrent sanguine expectations.

TIN VALE MINING COMPANY.

Sir,—Can you, or any of your correspondents, favour the shareholders in this company with any information regarding its present state; and whether there is any probability of a dividend being paid? At their meeting, in March last, the directors presented a highly favourable report as to the condition and prospects of the mine; but, since then, little intelligence has appeared in the *Mining Journal*, with regard to the concern.—R. T.: *City, Dec.* 21.

THE WHIDDEN MINES.

Sir,—I should be obliged if Capt. J. Kernick, of the Whidden Mines, would furnish the public, through the medium of your Journal, with the instructions of Mr. Murray in reference to the prevention of the metal in tin ore being evaporated or dissolved in the process of dressing. With the secret of preventing it from being washed away we are fully acquainted; but this evaporation and dissolving is quite new to us.—A Tin Dresser: *Liskeard, December* 14.

East Pool.—At a two-monthly meeting, held at the mine on the 19th inst., the accounts were examined and passed, showing—Labour cost for October, 224*l.* 8s. 5d.; November, 229*l.* 7s. 6d.; merchants' bills, 219*l.* 18s. 7d.; tributers in part, 163*l.* 3s. 8d.; subsist, 193*l.* 18s.; balance from last account, 2s.=1030*l.* 18s. 1d.—By copper ore sold, 5th Oct., 660*l.* 18s. 6d.; tin sold, Dec., 129*l.* 11s. 1d.—together (less dues, 1-30th, 26*l.* 7s.) 764*l.* 2s. 7d.; received two months' water charge, 120*l.*; ditto sundries, 1*l.* 14s. 6., leaves balance against the mine, 145*l.* 1s.

Wheal Calstock.—This mine is in duchy land, situate about one mile west of Calstock, close to the river, and bounded south by Cothele; there are eight large lodes running through the sett, which is full a mile in length; some of these lodes are found to form a junction not far from the point where the 30 fm. level has been driven. Two levels have been driven, the 30 and 50; the end of the former being 230 fms. from the eastern boundary; a cross-cut is also now driving, with the view of taking the junction of three large lodes, one of which has a good course of copper ore in the 50; this cross-cut has been extended to a greater length than first contemplated, attributable to the lodes taking a more vertical, or downright, direction than nearer to surface, which is considered by all miners a favourable indication, the ground improving in depth, and the branches of ore dropping towards the lode. It is supposed that the cross-cut will soon take the lode. The present driving in the 50 fm. level is a continuation of an old level in the adjoining sett to the east, driven west some years since to the eastern boundary of Wheal Calstock, on a south lode, which produced a considerable quantity of ore, but abandoned without any trial to the east, or any search for the north lodes; this level is driven to the north of this south lode, and a north lode has been cut, 7 feet wide, of which about 3 ft. is a good course of copper ore; this has been laid open 10 fms., and a pitch set on tribute to four men, at 10s. in 1*l.* This mine may be said to possess many advantages, requiring no machinery to work down to the 50 fathom level, which is drained by the adit of the adjoining sett, of which a grant has been obtained, a shaft, moreover, having been sunk 20 fms. below the 50, which can be drained to that level by a water-wheel. Large returns of copper ore were formerly made from this sett on the south lode, at 20 fms. from the surface, which lode drops into the north lode, at about the bottom of the shaft, but has never been worked on. North of this lode is another, 7 ft. wide at surface, composed of gossan, mundic, and fluor-spar, with black and yellow ore; a cross-cut is now driving in the 50 towards it, and is expected to be cut in driving further about 8 fms. The ground is a beautiful light blue killas, and easy for driving.

Coal near Cowbridge.—A promising vein of coal has been worked into at Ponclown, about a mile and a half south of Llantrissent, close to the turnpike-gate. This will prove a great boon, we predict, to Cowbridge and its neighbourhood—the road thereto being level, and in excellent order.—*Cambrian.*

Shotton Colliery,—G. Wall was killed by an explosion of gunpowder at the north pit.

Dirange.—Two men were buried in one of the levels in Palladras Downs Mine, on Monday last, by the giving way of a stull. One was soon dug out quite dead; but they had not been able to reach the other up to Wednesday morning, although repeatedly heard to moan.

Detonating Signals.—We have had our attention drawn to a paragraph which has been going the rounds of the daily papers, relative to the recent introduction of hand detonating signals on the North-Western Railway; but as that company are not the originators of this mode of giving notice of any casualties that may exist on the line to impede the progress of the train, but merely copyists, like many of our contemporaries, without acknowledging the authorship, we think it due to the locomotive manager of the Great Northern Railway, to award to him the credit of their introduction, which his foresight for the safety of the public caused him to adopt; and to Mr. Armitage, of Louth, the concoctor of the detonating light, the merit, after much perseverance and labour, of their perfection, and certainty of discharge in all states of atmosphere.

York, Newcastle, and Berwick.—Mr. Hudson is about to take in hand the entire completion of the docks at the Tyne, which will give to the York, Newcastle, and Berwick a perfect water terminus.

Opening of the Manchester, Sheffield, and Lincolnshire Extension from Lincoln to Hull.—This line of railway was opened for public traffic on Monday last. The first train from Lincoln left at 7.15 A.M. The train started from the Midland station, the line to Hull forming a junction with that railway east of Lincoln, while west of the city, the same company's line from Sheffield to Lincoln runs into the Great Northern Railway, and into the station of that company, so that the Manchester, Sheffield, and Lincolnshire Company will have trains running into both the Lincoln stations. A branch line from New Holland to Barton-on-Humber will soon be opened, to accommodate the traffic from the south-east of England to the north, *viâ* Barton Ferry, to the Hull and Selby Railway. The merchants and traders of Hull anticipate great advantages from the Midland districts being brought into so close connection with their port. Four trains daily run each way between Hull and Lincoln, in conjunction with trains to and from Lincoln and Nottingham. The fares are moderate, and the distance is accomplished in 2¼ hours. The opening train left Hull at 8 P.M., and reached Lincoln at a quarter past 5, without any accident.

JOINT-STOCK BANKS.

Shares.	Companies.	Paid.	Div. p. cent.	Price.
22,500	Australasia	£40	£3	£16¾
30,000	British North American	50	6	38½
20,000	Colonial	25	5	44
—	Commercial of London	20	6	18½
4,000	Ionian State	25	6	24 ¼ 25
60,000	London Joint-Stock	10	6	15½
30,000	London and Westminster	20	6	20½
10,000	National Provincial of England	35	5	33
20,000	National of Ireland	22½	5	17½
30,000	Provincial of Ireland	25	8	40
4,000	Ditto New	10	8	14½
—	South Australia	22½	—	23½
20,000	Union of Australia	25	6	23
10,000	Ditto New	24	6	24 24½
60,000	Union of London	10	6	10½

MISCELLANEOUS COMPANIES.

Shares.	Companies.	Paid.	Div. p. cent.	Price.
10,000	Assam Tea Company	£20	—	£ 3
1,080	Auction Mart	—	£ 5	28
12,000	Australian Agricultural	50	1	18
10,000	Australian Trust	35	—	30
6,000	British Alkali	25	4	16½
10,000	British American Land	35½	—	14
8,000	British Rock and Patent Salt	35	18	11
6,918	Canada	32½	6	28
—	City Bonds (Navigation)	—	8½	81
1,800	Corn Exchange	37½	14	26½
5,000	Droitwich Patent Salt	25	5*	11
2,700	Equitable Reversionary	25	4½	95
—	General Reversionary Interest	100	5	100 105
9,000	General Steam Navigation	14	12*	20
—	Hudson's Bay Stock	—	10	230 240
2,100	Hungerford Market	100	5	45
1,800	London Commercial Sale Rooms	—	1½	31 32
6,000	London Reversionary	22	—	24½
800	Margate Pier	—	10	196
10,000	Mexican and South American	7	—	3½ 4
20,000	New Brunswick	75	—	—
11,600	Peninsular and Oriental Steam	50	7	58½
6,000	Ditto	40	—	—
5,367	Reversionary Interest Society	100	4½*	90
—	Royal Mail Steam	—	5½	45
8,000	South Australian	25	6	90
20,000	Upper Canada	100	5	93 94
20,000	Ditto	—	5	93 94
10,000	Van Diemen's Land	20	—	4

* Those marked with an asterisk (*) are dividend per share.

Cannel Coal.—Northumberland and Durham have long been famed as the finest coal-fields in the world for every description of coal, except the Cannel coal; but it appears, from recent discovery, that it possesses as fine a Cannel coal as any yet discovered. Cannel coal has lately been discovered in the northern district, in the county of Durham, at Blaydon Main Colliery, in the possession of G. H. Ramsay, Esq., about four miles west of Newcastle-upon-Tyne. The seam of coal in this district varies from 2 ft. 6 in. to 3 ft. in thickness, with 10 in. of the common bituminous coal underlying it, which causes it to work more favourably; it is entered, for the purpose of mining, by means of a shaft, 30 fms. in depth. The coal in this seam resembles jet, and is of the finest quality, coming out in large blocks of a foot in diameter; it burns freely, yields a bright white pleasant flame, and affords a light sufficiently strong to enable a person to read by it. It has been experimented upon by Dr. Fife, M.D., professor of chemistry at the Aberdeen University, with highly satisfactory results. From the flaky texture, it speedily disintegrates into flat masses, burning with little intermission, and scarcely any tendency to agglutination. This property allows a free passage to the air, favours rapid combustion, and causes an exhibition of an exceedingly brilliant light; its prompt and rapid action appears to adapt it in a remarkable manner, either for the purpose of gas-making or house purposes. It seems to bear transportation better than any other sample of coal which comes under notice—a most essential point. It must be observed, that the proportion of earthy matter is unusually small in this coal, which is rather uncommon, as many coals are objectionable for the great quantity of very white ashes which are left after combustion, filling up the grates to an annoying degree. Now that this coal-field is discovered, it is hoped that it will be more extensively used, both for gas and houses; for the former purpose, it is necessary to state, that it has twice the illuminating power of any coal yet known; and, for the latter, people will enjoy purity and cleanliness. Hence the day will come when London—renowned as one of the most dirty, dark, and smoky capitals of Europe, whose two and a half millions of inhabitants breathe an atmosphere surcharged with noxious matter—may rank among the most cleanly, and may enjoy as fine and salubrious an atmosphere, as any of the great cities of the Old or New World, by using the new coal, entitled, "Ramsay's Newcastle Cannel Coal."

The Gold District of California.—The conflicting statements respecting the discovery of gold in vast quantities in the neighbourhood of the Sacremento, in Upper California, still continue—indeed, the latest news from America teems with speculations on the immense resources which the annexation of this country will bring to the United States; and, if possible, the accounts are still more Utopian than the first rumours. It is now said, that the gold plain extends over 150 miles long by 50 broad—that prills can be picked out of the rocks by a common knife in abundance—and that the metal in the whole of the soil over this extensive plain sparkles in the sun, glitters in the streams, and glows on the summits of those mountains, which have for ages reared their golden coronets to Heaven. Even the President of the United States, in his message, makes this subject form a very large and prominent portion—stating that officers had been sent to investigate the subject, and that they had reported that 4000 persons were employed collecting gold; and that there must be a most extensive territory rich in gold: he even goes so far as to recommend that a mint should be immediately established in California. We have here and there, however, some few words of caution, stating, from personal knowledge, that the real facts are much exaggerated—that what gold there is, from the nature of the country, is most difficult to obtain—and that, when the rainy season sets in, those now gold seeking will be locked in the wet plains of the Sacremento for a month or six weeks. We have no doubt there is much gold in California; but we must hear a great deal more on both sides of the question before we can believe it is to be had in the easy manner described; and, when the scarcity of provisions is considered, we do not envy the "treasure seekers" their prospects. It puts us very much in mind of the two Pizarros in South America; one brother was laughed at for being wise enough to remain on a fertile spot to raise corn and gather food; but, on the gold seekers' return, worn out and nearly famished, they were glad to barter half their collected riches for a share of the other's food. We would say to the President of America (with Mrs. Glass), when he talks of a mint—"First catch your hare," &c. Since writing the above, we have received a detailed statement from a correspondent, giving a history from the first discovery to the end of September, and which, in a great measure, confirms the most extraordinary part of the information received up to that period; 550,000*l.* was *known* to have been obtained, and the region supposed to extend over at least 500 square miles. We fear this precious discovery will be productive of immense evil to society over a large extent of territory in Western America; and when the surface pickings fail, as fail they must, tens of thousands of discontented beings, unfitted for labour, will be thrown back upon society. We shall give the entire details in our next.

Recent accounts from Malacca represent the tin mines to be yielding as largely as ever. A new mine has just been opened, in which the ore was found close to the surface, and it was most rich and fertile in tin.

Hamburg advices, of the 15th, state that the copper trade had become active, owing to a contract, for the use of the French Government, of 70,500 kils. of Russian copper, or copper from the Hamburgo-Copper-Works. The prices of both had advanced—the latter is quoted at $62 banco per 100 lbs.

By way of Singapore we have letters from Labuan to the 16th of October, at which time all was quiet and peaceable at the new settlement. There had been a little sickness amongst the natives at the change of the monsoon, the complaints being principally colds and ague, arising from the insufficient protection which the huts afford against the weather; but the Europeans were all healthy. The Spanish Government had been in communication with the Labuan authorities on the subject of obtaining a supply of coal for their steamers at the island. Sir James Brooke considers that the operations of the Eastern Archipelago Company will greatly advance the prosperity of the settlement of Labuan, and it may be observed that the circumstance of steam-ships calling frequently at the island for a supply of coal will, of itself, greatly aid in the object which our Government had in view, in establishing the settlement—viz.: to suppress piracy throughout the Eastern Archipelago. The editor of the *Singapore Free Press*, of the 2d November observes:—"We do not doubt but that under the skilful management of Sir James Brooke and his talented staff of officers, Labuan will, ere many years, attain that importance as a British possession which its situation, combined with its valuable coal mines, is fitted to give, and we think that before many months it will be made a station for the steamers to coal at; indeed, it is already reported that the Spanish steamers intend to call there monthly for the purpose of coaling on their way to Singapore, and those of the Peninsular and Oriental Company will probably eventually adopt the same plan. The coal seams are situated about seven miles from Victoria Bay; the method used for working the mines are of the most primitive order, and it is to be hoped will soon be superseded by some plan which will falicitate the operation of coaling, and materially diminish the cost for labour. This we learn, from one capable of judging, would be easy of accomplishment, and Sir James Brooke will no doubt soon direct his attention to the subject."

The Double Vapour-Engine.—In the *Mining Journal* of the 9th inst., we noticed the successful performance of this engine, which had been exhibited in the previous week. We were, yesterday, again gratified with an inspection of this novel machine, during some further experiments, and which were still more satisfactory. On the steam from the steam-cylinder passing to the chloroform chamber, and on the condensation of the latter, the mercury in the vacuum gauges, at each stroke, averaged from 28 to 29 in., or very nearly a vacuum. There are several points of considerable importance worthy of peculiar notice in yesterday's trials; but being so late in the week, with a press of matter, we must defer their full consideration until next week, when we shall return to the subject.

The Fairfield Steam-Carriage.—This unique locomotive carriage, constructed by Messrs. Adams and Co., of the Fairfield Works, left the Paddington station on its second experimental tour, at eight o'clock yesterday morning, for Bristol. This carriage is intended for the Bristol and Exeter Railway, and we have no doubt that it will be brought into general use on all railways, and will, to a great extent, supersede the heavy locomotives now employed. The journey to Reading was made at the rate of 45 miles per hour, and, to all appearance, the same degree of speed would be maintained throughout the journey. The carriage, with 50 passengers, including the motive-power, fuel, and water, weighs only 14 tons, and consumes about 8 lbs. of coke per hour.

Saloon Carriages on the London and Brighton Railway.—A new description of first-class carriage has been constructed for, and is now running on, the London and Brighton line. Instead of having three compartments, as in the ordinary first-class carriage, it has only two; and these, at the option of the passengers, family, or pleasure party, may, by an ingenious mechanical contrivance, be thrown into one elegant saloon. They are also fitted up at the end and sides with sofas for general use and the convenience of invalids, and may be converted into bed-carriages, if required.

French and Belgian Lines.—The receipts on the line from Antwerp to Ghent amounted, for the last month, to 22,188 fr. The goods traffic on the State line has increased so much, that the coke furnaces of the company are insufficient to furnish the supply of fuel. The line from Paris to Sceaux, unable to withstand the commercial crisis, has been sequestered, and will be worked by the State. The Tours and Nantes line has been opened between Tours and Saumur, and the second section from Saumur to Angers is to be completed by the spring.

Vacant Railway Appointments.—Mr Rastrick, the engineer, and constructor of the Brighton Railway, is a candidate for the vacant directorship in that company. Mr. Hughes, the manager of the East Anglian Railways, has resigned.

South Wales.—The first locomotive for working the traffic on the section of the South Wales to be first opened, was launched on the line at the beginning of the week. It took a team of 18 horses to bring it to its destination.

Current Prices of Stocks, Shares, & Metals.

STOCK EXCHANGE, Saturday morning Eleven o'clock.

Bank Stock, 7 per Cent., 191 89
3 per Cent. Reduced Ann., 88 ⅜ ⅝
3 per Cent. Consols Ann., 89⅝
3¼ per Cent. Ann., 88⅜ ⅝ ⅛
Long Annuities, 8⅝
India Stock, 10½ per Cent., —
3 per Cent. Consols for Opg, 88⅜ ⅝
Exchequer Bills, 1000*l.* 2d. 38 37 pm.

Belgian, 4½ per Cent., 74
Dutch, 2½ per Cent., 49⅝ 9
Brazilian, 5 per Cent., 76 5½
Chilian, 6 per Cent., 85 6
Mexican 5 per Cent., 22⅝ 3½
Russian, 5 per Cent., 103½ 3
Spanish, 5 per Cent, 13½
Ditto 3 per Cent., 26⅝ 7

Mines.—Although the business transacted in the mining share market during the week has not extended over a large number of mines, still there has been a fair amount completed. We find a constant inquiry for shares in leading mines, which cannot be obtained at buyers' quotations.

In Bedford United, Wheal Trehane, Tamar Consols, Mendip Hills, &c., there has been some large sales.

Buyers are to be found for South Wheal Frances, South Basset, West Caradon, and Carn Brea.

We learn that Tincroft has considerably improved, and an increased demand has been made for them.

The fall which took place in the standard of last week has created some degree of disappointment, especially as the cause appears unaccountable.

Shares in the following mines have been done this week—West Caradon, Condurrow, Bedford United, Wheal Trehane, Mary Ann, Camborne Consols Mendip Hills, Tamar, Stray Park, Wheal Trelawny, East Tamar, Tincroft' Lewis, Penannt, Craigwen, &c.

At the Wheal Seton account meeting, on the 11th inst., a dividend of 10*l.* per share was declared on September and October workings. By the financial statement furnished, we find the profits on the two months amount to 1241*l.* 7s. 4d., notwithstanding the low standard for copper ore. After the deduction of 990*l.* for the dividend, a balance of 710*l.* 8s. 8d. is carried to the credit of the next account. The agent's report represents the mine to be as productive as last reported, especially in the ends, stopes, and winzes between the 60 and 90 fm. levels.

At the Stray Park, Camborne Vean, and Wheal Francis meeting, on the 15th, a dividend of 10s. per share was declared. By the accounts, we find a balance of 899*l.* 8s. 7d., and after payment of the dividend, a credit of nearly 400*l.* is carried to next account. The agents' report of the underground operations and prospects of the mine is highly favourable.

At the Wheal Russell meeting, on the 8th inst., a call of 10s. per share was made, for the purpose of prosecuting the mine with vigour. The financial statement showed a balance of 214*l* in favour of the adventurers. The report of the mine, furnished by such experienced and practical men, is quite sufficient for any body of shareholders to proceed in the undertaking with spirit and encouragement. The lode in the present end is highly promising, the leader carrying fine stones of rich ore.

At the Wheal Tremayne account, on Friday, the 15th inst., the statement showed a balance of 168*l.* 7s. 11d. against the mine—at the same time, the agent's report represents the prospects of the mine as very good, and progressing in a satisfactory manner. The copper sold in the two months realised 458*l.* 7s. 10d., and the tin 2176*l.* 0s. 5d., including the sale in December, which reduces the loss, during that period, to 14*l.* 11s. 6d. only.

At the meeting of the Mendip Hills shareholders, held yesterday, it was decided on taking a lease for some additional slag ground adjoining the company's.

Caradon United adjourned meeting, Condurrow, and East Pool, have been held during the week.

East Crowndale annual meeting was held on Wednesday. The accounts showed balance of 2187*l.* 14s. 3d. against the company, to meet which a call of 10s. per share had been made. According to the captain's report, in valuing the lode taken away, the secretary estimated that 1300*l.* of tin was at surface. A proprietor animadverted rather severely on the absence of some correct data, for ascertaining the value of the returns from the mines. Other remarks passed, which, it is trusted, will tend to new measures with the new year, and we, therefore, look to the future management with some degree of hope.

In foreign mines the business appears to have been confined principally to St. John del Rey, United Mexican, and Bolanos. Asturian, Copiapo, and Australians, have also been done.

By the Lisbon mail, which arrived here on Saturday last, a further remittance of 11,000*l.* was received for the Portuguese bondholders.

The *Great Western* arrived at Southampton, yesterday, with the West Indian and Mexican mails, having on freight $2,054,216, on merchants' account; $37,313 on account of the Mexican bondholders; and we also understand that $70,000 of the above are for the United Mexican Mining Company. The dates are—Vera Cruz, Nov. 15; Tampico, 13; Havannah, 26; Honduras, 6; Jamaica, 21: St. Jago de Cuba, 19; and Demerara, 19.

By the Indian mail we are advised that the metal market of the east continues to improve.

HULL, Thursday.—Under the influence of an improved market in Consols, and a partial return of confidence, better prices have been paid for shares since we last wrote, but they have receded a point or two from the highest rates.

RAILWAY TRAFFIC RETURNS.

Name of Railway.	Lgth. Rway.	Present actual cost.	Price per share	Last Div.	Tragic Returns. 1848	Tragic Returns. 1847
Belfast and Ballymena	37¾	—	20½	—	£ 352	—
Birkenhead, Lancashire, & Chesh.	19	997,284	37	5 p.c.*	673	514
Caledonian	141	3,993.732	21	—	3709	—
Chester and Holyhead	84	3,014,602	20⅝	4	1236	514
Dublin and Drogheda	35¼	774,875	26	—	596	631
Dublin and Kingstown	7¾	395,915	—	6	598	503
Dundee, Perth, & Aberdeen Junc.	47¼	544,554	25⅝	8	901	709
East Anglian (Lynn to Ely)	67¼	1,167,104	4⅝	—	653	—
East Lancashire	44	1,733,915	17	5	1564	805
Eastern Counties and Norfolk	307	10,364,505	12¼	4	13622	12266
Eastern Union	50¼	1,522,232	20	—	1123	1100
Edinburgh and Glasgow	57¾	2,556,889	39	6	3109	3082
Edinburgh and Northern	78	1,722,213	15¼	4*	1520	528
Glasgow, Paisley, and Ayr	102¼	2,286,353	65	4	2413	2712
Glasgow, Paisley, & Greenock	22¼	848,328	14⅝	4	791	859
Gt. Southern & Western, Ireland	131	2,844,897	22½	4*	3336	1444
Great Western	305¾	11,311,069	79	7	18662	16522
Kendal and Windermere	10½	174,600	23	—	111	85
Lancaster and Carlisle	70	1,476,102	49	4	1811	1222
Lancashire and Yorkshire	172½	8,242,628	57-8	6	9957	8372
London and North Western	435	22,835,120	123	7	37758	36697
London and Blackwall	4	1,299,675	5	1-12	513	678
London, Brighton, & South Coast	162½	6,284,812	30⅝	2½	7327	6411
London and South-Western	215	7,139,733	40½	6	7728	6430
Londonderry and Enniskillen	14½	154,643	16	—	116	96
Manchester, Sheffield, & Lincolnsh.	56½	4,651,093	44	5	2645	1809
Maryport and Carlisle	28	443,974	40	—	—	—
Midland Company	471	13,254,006	83	6	18852	18235
Midland Great Western (Irish)	50	725,332	17	4*	1048	801
North British	99	3,163,450	15½	5	2286	1665
Scottish Central	45¼	1,245,496	26⅝	—	817	—
Shrewsbury and Chester	47	780,272	11¼	5	1309	530
South Devon	50½	1,789,351	12⅜	—	1128	601
South-Eastern	165½	7,389,322	23¼	6⅝	7170	6961
Taff Vale	38	820,056	125	6¼	1553	1682
Ulster	36	684,684	45⅜	—	767	665
Whitehaven Junction	42	160,879	9¼	3	169	220
York, Newcastle, & Berwick	270	5,038,255	28	8	13409	10636
York and North Midland	255⅝	4,179,309	52	8	7327	6836
FOREIGN RAILWAYS.						
Amiens and Boulogne	76¼	573,338	8	4	1210	1107
Antwerp to Ghent (monthly)	31	—	—	—	—	—
Marseilles to Avignon	71¼	—	8¼	—	—	—
Dutch Rhenish	57¼	—	¾	—	756	751
Northern of France	211	2,000,000	7¼	4	11807	11588
Orleans to Bourges (Central)	107¼	—	—	—	1976	2744
Orleans to Tours	72	600,000	32⅞	6	2512	3498
Paris and Orleans	82	2,011,720	28¼	12½	6284	8349
Paris and Rouen	85	2,082,916	18	11½	4687	5582
Rouen and Havre	59¼	—	8⅝	—	2169	2022
Strasburgh and Basle (monthly)	88	—	6	1⅞	6537	6932
West Flanders (ditto)	—	—	¾	3	1065	1615

* Interest.—Total for last week, £174,031, being an increase of £25,083 over last year.

CORNISH STEAM-ENGINES.

The number of pumping-engines reported for the month of Nov. is 26—the quantity of coals consumed being 2168 tons, lifting, in the aggregate, 19,000,000 tons of water 10 fathoms high—the average duty of the whole is, therefore, 50,000,000 lbs. lifted 1 foot high by the consumption of a bushel of coal.—The following have exceeded the average:—

Mines.	Engines.	Length of stroke	Load in pounds.	Load per sq. inch. on pist.	Strokes per min.	Consump. of coal in bus.	Million lbs. lifted 1 foot by consump. of 1 bush. coal	Lifted ft. by 1 cwt. of coal.
Great Work	Leeds's 60-in.	9·0	47,020	12·9	8·2	2475	55·7	66
East W. Crofty	Trevenson's 80	10·33	80,938	12·0	4·4	2320	60·8	73
East Pool	60-inch	9·75	37,481	10·8	3·8	1152	50·9	61
Poldice	85-inch	10·0	75,563	9·3	6·6	3560	53·1	63
South Frances	75-inch	11·0	33,167	6·1	4·8	1410	51·6	71
United Mines	Cardoza's 90-in.	9·0	99,468	13·7	6·2	4106	59·8	76
Ditto	Eldon's 30-inch	9·0	13,631	16·0	7·5	613	63·3	76
Ditto	Loam's 85-inch	10·0	89,320	11·8	6·6	3960	56·6	73
Ditto	Hocking's 85-in	10·0	99,093	14·6	6·6	4502	61·7	79
Treleigh Con.	Garden's 60-in.	10·25	37,179	10·5	5·3	1608	50·5	65
Tywarahayls	Gardiner's 80in.	10·0	68,517	10·9	6·6	3660	50·8	66
East Wh. Rose	Penrose's 70in.	10·0	59,177	13·8	4·0	1542	72·2	86
Ditto	Michell's 70-in.	10·0	63,688	14·8	3·2	1284	69·9	83
Wh. Mary	63-in.dir.acting	8·66	26,608	8·5	6·7	1567	50·8	60

PRICES OF MINING SHARES.

BRITISH MINES.

Shares.	Company.	Paid.	Price.
1000	Abergwessin	7	—
512	Albert Consols	1	2¼
1024	Alfred Consols	8¾	5
1000	Antimony&Silver-Lead	5	5¼
1024	Ashburton United Mines	8¾	10
1624	Balleswidden	9	18
128	Balnoon Consols	25	25
10000	Banwen Iron Co.	6	6¼
1000	Barristown	5¼	1¼
4000	Bedford	2¼	2¼
1244	Birch Tor Tin Mine	9¼	1¼
8000	Blaenavon	50	17½
100	Botallack	182	60
120	Brewer	5	7
10000	British Iron, New, regis.	10	13
—	Ditto ditto, scrip	10	10
128	Budnick Consols	52½	35
1000	Callington	19	15
1000	Camborne Consols	5	4
20000	Cameron's Steam Coal	6	1
256	Caradon Copper Mine	9¼	2
256	Caradon Mines	22¼	10
256	Caradon United	24	5
256	Caradon Wh. Hooper	21	8
1000	Carn Brea	15	100
3000	Carthew Consols	1¼	5
112	Charlestown	220	60
512	Coatlitho Hill	¼	1
500	Combiawn	5½	3
128	Comfort	45	35
256	Condurrow	20	40
2560	Cook's Kitchen	14	2
1000	Coombe Valley Quarry	3¼	4½
6500	Cornish Mining Co.	2	2⅜-½
20000	Cornwall New Mining	1	1
1000	Copper Bottom	1¼	6½
1024	Cosheen	4¼	20
212	Craddock Moor	23¼	5
128	Creeg Braws	130	100
500	Cubert Mine	12½	—
1000	Cwm Erfin	2½	3
300	D.Prior&Buckfastleigh	—	—
7100	Derwent	8½	5
845	Devon&CourtenayCon.	7¼	¾
1024	Devon Great Consols	1	220
1000	Dinorode	2	5
186	Dolcoath	30	15
2560	Drake Walls	5	4
10000	Durham County Coal	45	9
3000	Dyfngwm	10	12½
512	East Alvenney	5¼	12½
112	East Caradon	47	47
2048	East Crowndale	5½	2½
512	East Combe Silver-Lead	6¼	6½
128	East Pool	15	40
9000	East Tamar Consols	⅝	¼
—	East Wheal Albert	1	3
91	East Wheal Crofty	125	250
1024	East Wheal Fortune	2	3
128	East Wheal Rose	80	600
—	East of Scotland Iron Co.	5	1¼
123	East Wheal Seton	14	10
1280	Esgair Lli	1	2
256	Exmoor Wh. Eliza	6	9-10
512	Fowey Consols	40	45
1024	Freidd Llwydd Mines	1¼	3½
6400	Gadair	2	2
4600	Gen.Mining Co.for Irel.	1⅝	1½
256	Gonamena	44¼	16
128	Goonvrea	4	2
100	Great Consols	1000	250
1900	Great Michell Consols	1¼	½
256	Great Resugga Moor	11	6
512	Gt.Wh.Rough Tor Con.	18¼	11
1200	Growa Slate Company	5	5
256	Gwinear Consols	7	1
6000	Heignston Down Con.	¼	1
256	Herodstoot	18	22
10000	Hibernian	12¼	1⅝
289	Hobb's Hill	6	1½
1000	Holmbush	22	1½
1024	Kingsett and Bedford	¼	¼
827	Kirkcudbrightshire	8½	2
2048	Lamberooe Wh. Maria	13	2
252	Lanarth Consols	—	10
128	Lelant Consols	90	60
160	Levant	—	120
1000	Lewis	16	8
1000	Llwyn Malees	7	7
3600	Llynvi Iron	50	50
256	Lostwithiel Consols	19	14
6000	Marke Valley	10	1½
5000	Mendip Hills	3	1½
5000	Merionethshire SlateCo.	1¼	2
128	Metha	34	140
20000	Mining Co. of Ireland	7	5
256	New East Crowndale	3¼	2¼
128	North Fowey Consols	37	10
100	North Pool	45	510
140	North Roskear	5½	165
262	North Wh. Leisure	1¼	2
15000	Northern Coal Co.	23	2
128	Par Consols	—	1000
8000	Pennant & Craigwen	2	2
100	Penrhiw	30	65
1024	Penzance Consols	16s 3d.	2
512	Plymouth Wh. Yeoland	6¼	15
200	Polsalth Consols	5¼	4½
2500	Rhoswiddol&Bacheldon	10	10
10000	Rhymney Iron	50	13
10000	Ditto New	7	6½
1000	Rosewall Hill	1	5
256	Rosewarya Mines	—	12

BRITISH MINES—*continued.*

Shares.	Company.	Paid.	Price.
2048	Runnaford Coombe Tin	⅝	4
128	South Caradon	10	300
1100	South Dolcoath	4	5
256	Sth. Friendsh. Wh. Ann	20	4
256	South Molton	5	10
256	South Tolgus	10	55
256	South Trelawny	28¼	3
2000	South Wales Mining Co.	¼	2¼
128	South Wheal Basset	110	150
124	South Wh. Frances	160	240
256	South Wh. Josiah	—	1¼-2
1000	South Wh. Maria	2½	1½
10000	Southern&Western, Irish	2	4
280	Spearne Moor	30	40
256	St. Austell Consols	9	—
94	St. Ives Consols	—	320
128	St. Michael Penkivel	5	10½
999	St. Minver Consols	1	6
1000	Stray Park	43	18-19
9600	Tamar Consols	3	6½
1024	Tavy Consols	4	4
6000	Tincroft	7	6
1000	Tin Vale	2½	3½
58	Tokenbury	170	10
256	Tollpetherwin	3½	5
256	Tregordan	2	9
256	Trehane	2½	30
5000	Treleigh Consols	6	1½
2000	Trenance	3	—
96	Tresavean	10	150
120	Trethellan	5	16
129	Treviskey and Barrier	130	84
288	Treveal	1¼	5
100	United Mines	300	350
256	Wellington Mines	25	20
256	West Caradon	20	130
512	West Fowey Consols	40	12
256	West Providence	9	15
200	West Seton	40	210
—	West of Scotland Iron Co.	240	90
120	West Trethellan	5	30
256	West United Hills	—	4½
512	West Wheal Frances	1⅜	2
256	West Wh. Friendship	9	8
3725	West Wheal Jewel	11	1½
256	West Wheal Tolgus	21½	6
256	West Wheal Treasury	19	10
1024	Whiddon Mines	4¾	4¾
5200	Wicklow Copper	5	8⅝-¾
107	Wheal Adams	79	30
1000	Wheal Agar	—	8
256	Wheal Albert	10	1
240	Wheal Anderton	23	20
128	Wheal Ann	—	50¼
512	Wheal Anna Maria	6¼	8
1024	Wheal Ash	4¼	8
120	Wheal Bal	5¼	20
256	Wheal Benny	14¼	2
256	Wheal Blencowe	21	5
256	Wheal Bucketts	20	5
256	Wheal Calstock	5	12
1024	Wheal Cuad	1	4
268	Wheal Courtenay	12½	15
256	Wheal Forteague	6¼	3
388	Wheal Franco	27	18
128	Wheal Harriet	45	—
100	Wheal Henry	—	31½
1024	Wheal Lawrence	3	3
112	Wheal Margaret	79	250
512	Wheal Mary Ann	5	14
208	Wheal Mary Consols	60¼	8
—	Wheal Penhale	—	12
210	Wheal Prospect	4	7
120	Wheal Reeth	41	150
128	Wheal Rose	60	5
99	Wheal Seton	214	720
180	Wheal Sisters	35¾	5
512	Wheal Sophia	3¼	5
128	Wheal Spearne	10	75
128	Wheal St. Ann	30	35
550	Wheal Trescoll	4	5¾
260	Wheal Trelawny	7¾	65
256	Wh.Tremaine(St.Ervan)	9¼	2½
1024	Wheal Tremayne	9¼	3
92	Wheal Tryphena	140	265
1000	Wheal Vincent	1¼	6
256	Wheal Vlow (Perranz.)	⅜	⅜
184	Wheal Vyvyan	—	60
250	Wheal Williams	28¾	8
1024	William & Mary Worth	2	2¼

FOREIGN MINES.

5000	Alten Mining Company	14¼	1¾
15000	Asturian Mining Co.	13	2
20000	Australian	3	4¾
10000	Anglo-Mexican Co.	100	¼
12374	Ditto Subscription	25	1¾
6000	Barossa Range	¾	1¾
3000	Bolanos	150	2¼
2000	Ditto Scrip	15	3¼
12000	Brazilian Imperial	23	7⅛-8
10000	Cobre Copper Co.	40	13
10000	Copiapo Mining Co.	14	2¼-3
10000	General Mining Ass'n.	20	10
—	Guadalcanal	3¾	5¾
5000	Kinzigthal Mining Ass.	2	3
20051	Mexican Company	59	—
2000	Mexican & SouthAmer.	8	¼
5000	National Brazilian	30	3¼-5¼
104000	N. Brit. Australasian	1	¼
7000	Royal Santiago	10	4
11000	St. John del Rey	15	11¼-12
43174	United Mexican	Av. 28¼	3¼-¾

SOUTH AUSTRALIAN SHARE MARKET.—JULY 23.

Company.	No. of Shares.	Amount.	Paid-up.	Present Price.
Adelaide	2000	£5 0	£5 0	£2 8
Belvidere	640	5 0	1 9	4 5
Burra Burra	2464	5 0	5 0	162 0
Enterprise	1000	3 0	2 0	2 0
Greenock Creek	300	5 0	5 0	—
North Kapunda	4440	5 0	5 0	2 0
Montacute	100	50 0	50 0	55 0
Mount Remarkable	—	—	—	12 0
Paringa	8000	1 5	1 5	3 0
Port Lincoln	600	5 0	2 0	5 10
Princess Royal	400	50 0	37 0	42 0
Royal Mining Company	10000	10 0	10s. p. sh.	0 15
Victoria	750	2 0	2 0	—
Wheal Gawler	1280	10 0	10 0	15 0

LATEST CURRENT PRICES OF METALS.

LONDON, DECEMBER 22, 1848.

	£	s.	£	s.	d.
IRON—Bar *a*. Wales *ton*	4	15	5	5	0
,, London	0	0	6	0	0
Nail rods ,,	0	0	7	0	0
Hoops	0	0	8	10	0
Sheets, single	9	0	9	10	0
Refined metal	3	7	6	3	12	6
Bars, Staffordshire	0	0	6	10	0
Pigs, ditto	3	0	3	15	0
Welsh cold-blast foundry pig	3	15	4	5	0
Scotch pig *b*, Clyde	2	1	6	2	4	0
Do. toughened, Wales *c*	4	0	4	5	0
Stirling's Pat., Glasg. *c*	3	0	3	5	0
Rails, average	5	0	5	10	0
Chairs	0	0	4	0	0
Russian, CCND *c*	0	0	17	0	0
,, Archangel	0	0	13	0	0
Swedish Steel, fagt. *d*	0	0	15	0	0
,, ,, kegs *e*	13	10	14	0	0
COPPER—Tile *f*	0	0	78	10	0
Tough cake	0	0	79	10	0
Chili	0	0	70	0	0

	£	s.	£	s.	d.
COPPER—Ordin. sheets, *lb.*	0	0	0	0	9
Old	0	0	0	0	7½
YELLOW METAL SHEATHING	0	0	0	0	7½
TIN—Com. blocks *g*...*cwt.*	0	0	3	19	0
,, bars	0	0	4	0	0
Refined	0	0	4	6	0
Straits *h*	0	0	4	4	0
Banca, for home con.	0	0	4	6	0
ditto for export only	0	0	3	16	0
TIN-PLATES—Ch., IC *i*, *box*	1	9	1	10	0
,, IX	0	0	1	16	6
Coke, IC	1	6	1	7	0
LEAD—Sheet *k*...*ton*	17	0	17	5	0
Pig, English	16	0	16	5	0
,, Spanish	14	10	15	5	0
Red	0	0	18	0	0
White ditto	0	0	22	0	0
Shot (Patent)	0	0	19	0	0
SPELTER—(Cake) *l* on spot	14	10	14	15	0
For arrival	14	10	14	15	0
ZINC—(Sheet) *m* export	0	0	20	0	0
QUICKSILVER *n*...*lb.*	0	0	0	3	6

a Discount 2½ per cent. *b* Net cash. *c* Discount 2½ per cent. *d* Ditto
e In kegs ½ and ¼-inch. *f* Discount 3 per cent. *g* Ditto 2½ per cent. *h* Net cash.
In bond. *i* Discount 3 per cent. *k* Ditto 2½ per cent. *l* Net cash.
m Discount 1½ per cent. *n* Discount 1½ per cent.

REMARKS.—We have to note a more favourable aspect in the iron trade than for some time past, although the amount of business doing is upon a limited scale. There is, however, an impression among the best informed in the trade, that prices have seen their lowest, and that higher rates must rule in the early part of next year. The price of Welsh iron may be quoted about the same as last week; we have, however, to remark an increased firmness on the part of the makers, who are now not inclined to receive orders for bars, unless at full prices, and for immediate delivery. Scotch pig-iron has again improved this week, and we quote the price firm for present delivery at 41s. 6d. to 42s. 6d. per ton, nett cash. At the former prices there are buyers to some extent, whilst No 1 Gartsherrie finds buyers at 44s. In other metals no alteration.

GLASGOW, Dec. 21.—There has been a good deal of inquiry this week for pig-iron, more especially for delivery in the spring, but the transactions have not been numerous, in consequence of holders having further advanced their prices. We quote the prices to-day at 42s. and 42s. 6d., for cash.

LIVERPOOL, Dec. 22.—Considering the season of the year, the demand for iron is good, and prices are well sustained. This week there has been a good business done in manufactured iron. In consequence of the diminution of the railway demand, Welsh is rather depressed. In Scotch pig there is a good deal doing, and prices are rather stiffer. No change in tin, copper, or lead.

EXPORTS OF METALS TO ALL INDIA FROM LONDON AND LIVERPOOL,

FOR THE FIRST ELEVEN MONTHS OF 1847 AND 1848.

Metals.	1847.	1848.	*In.* in 1848.	*Dec.* in 1848
Spelter ... *Tons*	2894	2845	—	89
Copper	3064	3141	77	—
Iron, British	10355	18475	8120	—
Ditto, foreign	766	339	—	427
Tin-plates ... *Boxes*	7143	3909	—	3234
Lead ... *Tons*	976	661	—	315
Steel	542	253	—	289
Quicksilver ... *Bottles*	50	25	—	25

PRICE OF MATERIALS,

As Charged at the Stray Park Mines during the following months of 1848.

DESCRIPTION.	SEPT.	OCT.
Coal, carriage included	14*s* 6*d*	14*s* 6*d* per ton.
Iron, hoop	12 6	12 6 per cwt.
Nails, 3½-inch	—	17 9 ,,
Ditto, 4-inch	—	17 3 ,,
Ditto, 5-inch	—	16 6 ,,
Rope	36 0	— ,,
Hemp	0 4	— per lb.
Oil, refined	3 8	— per gallon.
Tallow	49 0	50 0 per cwt.
Candles, best	5 6	5 6 per dozen.
Powder	38 0	38 0 per cwt.
Hilts	—	1 4 per dozen.
Cans	—	4 0 ,,
Safety fuze	0 4	0 4 per coil.

LEAD ORES

TICKETINGS FOR ABOUT 100 TONS (20 CWTS.) NEWTONARDS LEAD ORE.

Douglas, Isle of Man, Dec. 16.

Buyers.	*Offer per Ton.*
Walker, Parker, and Co.—Chester	£8 13 6
Newton, Keates, and Co.—Liverpool	8 12 0
Tamar Smelting Company—Tavistock	8 2 0
Sims, Willyams, Nevill, and Co.—Llanelly	7 12 6

TICKETINGS FOR ABOUT 90 TONS LAXEY LEAD ORE.

Douglas, Isle of Man. Dec. 20.

Bidders.	*Price per Ton.*
Walker, Parker, and Co. (purchaser)	£18 7 6
Mather and Co.	18 4 0
Sims, Willyams, and Co.	17 17 6
Thomas Somers	17 15 6
Tamar Smelting Co.	17 15 6
Newton, Keates, and Co.	17 10 6

Sold at Holywell.

Mines.	*Tons.*	*Amount.*	*Purchasers.*
Talargoch	107	£9 8 0	Walker, Parker, & Co.
ditto	34	9 10 6	Newton, Keates, & Co.
ditto	25	9 18 0	J. P. Eyton.
Milwr	2½	9 17 6	Newton, Keates, & Co.
Hendre	40	9 7 6	ditto
ditto	25	9 11 0	Walker, Parker, & Co.
Parrys Mine	10½	9 5 6	Newton, Keates, & Co.
Fronfownog	100	9 16 6	Walker, Parker, & Co.
ditto	20	11 1 0	ditto
Deep Level	50	9 6 0	Mather & Son.
ditto	50	9 6 0	Newton, Keates, & Co.
Total tons		464.	

Sold at Aberystwith.

Goginan	27	£13 8 0	Walker, Parker, & Co.
ditto	73	13 13 0	ditto
Frongoch	90	8 15 6	Tamar Co.
Total tons		190.	

BLACK TIN

Sold the 5th of December, 1848.

	Tons	*cwt.*	*qrs.*	*lbs.*	*Price per Ton.*	*Amount.*
Lewis	15	4	3	22	£51 10 0	£785 4 7

Sold on the 11*th of December.*

Tincroft	17	1	3	23	£42 0 0	£718 2 0

Sold on the 15*th of December.*

Mine.	*Tons.*	*Price.*	*Amount.*	*Purchasers.*
Drake Walls	6	£51 10 0	£309 0 0	Williams; Calenick.
ditto	5¾	42 0 0	231 0 0	Daubuz & Co.
ditto	2¾	30 12 6	76 11 3	Daubuz; Calenick.
ditto	2¾	30 12 6	84 4 4	ditto ditto
ditto	1	38 0 0	38 0 0	Daubuz & Co.
ditto	¼	46 5 0	11 11 3	Calenick Co.

Total tons, 18.—Amount of money, £750 6s, 10d.

Mines.	*Tons.*	*Price per ton.*	*Purchasers.*
Par Consols	21	£43 2 6	Williams and Bissee Co.
ditto	20¼	43 2 6	Calenick Smelting Co.
ditto	20	43 2 6	Daubuz.
Providence Mines	10	44 5 0	ditto
ditto	8	43 0 0	Bolitho and Williams.

COPPER ORES.

Sampled Dec. 6, *and Sold at Andrew's Hotel, Redruth, Dec.* 21, 1848.

Mines.	*Tons.*	*Price.*	*Mines.*	*Tons.*	*Price.*
Devon Gt. Cons. / Wh. Josiah	99	£5 3 0	Wh. Anna Maria	77	£6 2 6
			ditto	45	5 14 0
ditto	95	5 4 6	West Caradon	91	6 10 6
ditto	71	6 18 0	ditto	70	6 7 0
ditto	69	7 4 0	ditto	42	12 16 0
ditto	64	7 16 0	ditto	36	3 9 0
ditto	59	8 7 0	ditto	23	7 14 6
ditto	49	4 1 0	Fowey Consols	89	6 8 6
ditto	46	7 8 0	ditto	82	6 0 0
ditto	44	5 9 6	ditto	79	4 14 0
Wh. Fanny	98	5 11 0	Wh. Friendship	117	7 10 6
ditto	97	5 9 6	ditto	97	7 8 6
ditto	96	4 7 6	Marke Valley	89	2 10 6
ditto	94	4 1 0	ditto	76	2 10 6
ditto	85	4 1 0	ditto	23	2 3 0
ditto	79	4 19 6	Bedford United	104	4 4 0
ditto	78	3 15 0	Wh. Pink	61	3 16 6
ditto	63	3 19 6	Phœnix Mines	33	7 0 6
Wh. Maria	75	4 10 6	Holmbush	30	4 1 6
ditto	51	8 3 6	Gonamena	26	5 14 0
			Wh. Williams	20	3 10 0

TOTAL PRODUCE.

Devon Gt. Cons. / Wh. Josiah / Wh. Fanny / Wh. Maria / Wh. Anna Maria	1534		£8404	16	6	Marke Valley	188	£ 466 1 6
						Bedford United	104	436 16 0
						Wh. Pink	61	233 6 6
						Phœnix Mines	33	331 16 6
						Holmbush	30	122 5 0
West Caradon	262		1877	15	0	Gonamena	26	148 4 0
Fowey Consols	250		1435	2	6	Wh. Williams	20	70 0 0
Wh. Friendship	214		1600	13	0			

Average Standard ... £ 81 12 0 | Average Produce ... 10¼

Average Price per ton ... £5 10 6

Quantity of Ore ... 2722 tons. | Quantity of Fine Copper, 276 tons 15 cwts.

Amount of Money ... £15,026 16 6

LAST SALE.—Average Standard ... £ 87 9 0.—Average Produce ... 8¼

COMPANIES BY WHOM THE ORES WERE PURCHASED.

	Tons.	Amount.
Mines Royal	124	£ 497 7 3
Vivian and Sons	535	3638 7 3
Freeman and Co.	363	1682 8 6
P. Grenfell and Sons	501	2210 19 0
Sims, Willyams, and Co.	463	2604 12 6
Williams, Foster, and Co.	542	4026 0 3
Schneider and Co.	94	367 1 9
Total tons	2722	£15,026 16 6

Copper ores for sale on Thursday next, at Andrew's Hotel, Redruth.—Mines and Parcels.—United Mines 1140—Par Consols 375—Wheal Comfort 237—South Caradon 234—Tresavean 228—Creeg Braws 136—West Wheal Jewel 55—South Wheal Fortune 44—West Trethellan 31—Wheal Brewer 22—North Downs 10—East Downs 9—Lanarth 5.—Total quantity of ore to be sold, 2526 tons.

Copper ores for sale on Thursday week, at Andrew's Hotel, Redruth.—Mines and Parcels.—North Roskear 1000—Consolidated Mines 561—North Pool 511—Tincroft 357—South Roskear 235—Fowey Consols 235—Wheal Seton 234—South Wheal Basset 130—South Wheal Frances 113—East Wheal Seton 16.—Total, 3392 tons.

COPPER ORES

At SWANSEA, for sale December 28.—Cobre 110, ditto 100, ditto 96, ditto 91, ditto 82, ditto 77, ditto 52, ditto 51, ditto 30, ditto 78, ditto 48.—Burra Burra 72, ditto 70, ditto 65, ditto 55, ditto 58, ditto 54.—Bershaver 115, ditto 110, ditto 97.—Cuba 110, ditto 101, ditto 100.—Copiapo 76, ditto 74, ditto 71, ditto 56.—Knockmahon 68, ditto 54.—Ballymurragh 31.—Total quantity of ore to be sold, 2275 tons.

NOTICES TO CORRESPONDENTS.

We must impress upon our correspondents, the necessity of invariably furnishing us with their names and addresses; not that their communications should, consequently, be noticed, but as an earnest to us of their good faith.

"Enquirer" (Durham).—The local terms made use of in the coal districts, respecting explosions in mines, are erroneous; and those who know better, ought to endeavour to correct this abuse of language. "The sulphur exploded," &c., is almost a universal term in these cases. Now, there never is "sulphur" in the atmosphere of a coal mine in a state to explode; when it exists, it is in the shape of "sulphurous acid," which is a non-supporter of combustion; "carburetted hydrogen," sometimes slightly mixed with "olefiant" gas, and other of the hydrocarbons, are the fatal harbingers of death in all these cases. Those who suffer from suffocation only inhale "carbonic acid" gas.

ELECTRO-MAGNETISM.—We hope to be enabled, in a short time, to give some particulars of the application of this agent as a motive-power—the principle being different to anything yet applied.

"Y." (Windsor).—Fuller's earth, to some small extent, is, we believe, found in Berks or Oxon; but the best, and the principal portion, is from large deposits near Reigate, in Surrey, in the greensand formation.

"J. W." (Minthaw) will find an advertisement respecting the Runnaford Coombe Tin Mines in another column—the particulars required can be obtained at the address given.

MINES OF AUSTRALIA.—In our next Journal we shall give a detailed description, with illustrations, of the celebrated Burra Burra Mines, with amount of sales, &c.

"A Shareholder" (Buxton) should address his letter to the secretary, at the offices of the company, Old Broad-street, who would forward the particulars.

"M. D." (Newcastle).—We are obliged for the note—he will perceive his wishes have been complied with.

"J. R." (Neath).—We should be glad of an occasional communication.

KAMPTULICON AND FANSHAWE'S ELASTIC PATEMENT.—We have received a long statement from Mr. George Walter, of the Kamptulicon Company, in which he denies the correctness of the notice in the *Mining Journal*, of the 2d instant, on the subject of Fanshawe's patent elastic pavement and floor-cloth. Not only does want of space preclude us giving the communication entire, but it is a subject which cannot be interesting to the public. Mr. Walter states, that he was completely misled in his first negociations with the patentees; that when the purchase-money was paid, he went off to France, leaving the licensee to discover, how he could, the manipulation of mixing India-rubber, in a dry state, with sand or saw-dust, which, however, he at length effected, and a floor-cloth of the material having been laid down in the Hall of Commerce, it took fire by spontaneous combustion, and nearly burned down that splendid building. It was then he turned his attention to the introduction of some less inflammable substance, and succeeded in obtaining granulated cork from the shavings. With respect to the Chancery suit, Mr. Walter states, that so far from being settled in favour of the plaintiffs, the Vice Chancellor ordered that he should pay a portion of the costs—about 100*l*. Such is the general purport of this gentleman's contradiction; we know nothing of the facts except from hearsay, and having given a short statement, as received from Mr. Fanshawe, we think it but fair to give this reply from Mr. Walter.

ERRATA.—In Dr. Murray's communication in last week's Journal, on Peat-Moss, for "peat-neek" read "peat-reek,"—and in that on Ellerman's Patent Deodorant, for "Pandrette," read "Poudrette."

*** We should feel obliged to all pursers captains, or adventurers, to forward particulars of meetings, &c., of the mines with which they may be connected, on the earliest opportunity, that they may be published in the Journal.

Now ready, price 2*s*.,

A Glossary of Mining and Smelting Terms,

USED IN ENGLISH AND FOREIGN MINING DISTRICTS.

Published at the office of the *Mining Journal*, 26, Fleet-street, London; and may be had of John Weale, 59, High Holborn, and of all booksellers and newsmen.

THE MINING JOURNAL

Railway and Commercial Gazette.

LONDON, DECEMBER 23, 1848.

The MINING JOURNAL is published at about Eleven o'clock on Saturday morning, at the office, 26, Fleet-street, and can be obtained, before Twelve, of all news Agents, at the Royal Exchange, and other parts of London.

In last week's MINING JOURNAL we noticed, at some length, an event of the most material importance to the welfare of Ireland—that of a body of English capitalists, after 12 months' exploration of the extensive coal and iron district in the county of Antrim, having just opened one colliery near Murlough Bay, laid down a line of railway to the shipping place, and were forming a temporary jetty, preparatory to the construction of a substantial pier on a large scale. We have now a complete confirmation of all we then stated on the subject, in the observations made by Mr. GILTAN, one of the promoters of the Antrim Mining Company, at the annual meeting of the ROYAL SOCIETY FOR THE PROMOTION AND IMPROVEMENT OF THE GROWTH OF FLAX IN IRELAND, held yesterday week in Dublin, and at which the Marquis of DOWNSHIRE presided. He stated—"That himself, and the gentlemen with him, had become lessees of from 24,000 to 25,000 acres of land, in a district in the county of Antrim. They had opened one colliery there already, although the very boisterous state of the weather latterly had prevented them from erecting a jetty for vessels to come in and ship their coals. In this colliery they had three seams of coals—one being anthracite, or Welch coal, another being a similar description to the Scotch, or Cannel coal, and well adapted for steam-power, and the third was of so good a quality for domestic purposes, that he trusted they would soon be able to enliven the firesides of the inhabitants of Belfast with it. In the meantime, they had been going on with their investigations, and they had been amply rewarded for their trouble. In the extensive mineral district of Ballycastle, they had discovered large deposits of ironstone, superior to the celebrated black-band of Scotland. The seam was 2 ft. 9 in. in thickness, a very little below the surface, 1½ mile in length already traced, which would produce from 60 to 64 per cent. of iron. The intentions of the present lessees were to extend their operations, and form a limited joint-stock company, immediately to erect blast-furnaces, for the purposes of the manufacture of a superior iron."

The development of the resources of Ireland, in the natural production of peat, which has been so accelerated by the proceedings of Mr. JASPER ROGERS, in the working of his patent, promises to be productive of advantages hitherto totally unthought of. It appears that, from frequent distillations and analyses of the produce of the peat bogs, on a large scale, it is satisfactorily proved, that from 100 lbs. of peat, at a cost of 80*l*., its several products can be rendered merchantable, to the value of 148*l*. These products consist of, besides the peat-charcoal—of the value of which we have so often spoken—ammonia, naphtha, soda, ash, oil, and, we believe, but lately discovered, a substance, in every respect similar to spermaceti, which has been refined, and of which superior candles have been made.

With these facts before us, with the clearest evidences that Ireland teems with mineral wealth, in value hitherto totally unestimated, and that in the removal of one of the greatest present curses of Ireland—her peat bogs—not only will large pecuniary returns be made to the capitalist, but the land prepared for agricultural purposes, what inducement is there not for all, by every means in their power, to lend a helping hand? The opportunity for the manufacture of iron of the highest quality, at the very lowest rate of cost; the extension of the manufacture of peat-charcoal all over the kingdom, and obtaining the valuable results from it, above noticed; with the future exertions of the Irish Amelioration Society, and the progress of the Royal Society for the Promotion and Growth of Flax in Ireland, all! all! tend to one great point—the employment, and the consequent *legitimate* support of, tens of thousands of the population now in misery, worse than pauperism and degradation—the opening up in Ireland of all its sources of wealth, and the establishment of various manufactures in every province, and the advancement of the peasantry from their present semi-barbarous state to one of civilisation, plenty, and content.

We close these remarks with the concluding paragraph of the report read at the meeting mentioned above, and which is so consonant with the op

of the earth, which the bountiful gifts of Providence have naturally pointed out for her. At the present moment, there seems to be a universal feeling, from the Government of the country to its poorest inhabitant who is capable of reasoning on the subject, that it is not political, but *social* change that Ireland requires; and that, if the same energy be henceforth applied to industrial pursuits which has hitherto been wasted in pursuit of political chimeras, the result must be equally important in its relation to the interests of the empire and to the condition of the individual."

It is at all times to be regretted, when a difference is found to exit between lessors and lessees—directors and shareholders—pursers, or agents, and adventurers, or, indeed, between any parties whose interests should be considered as identic, and whose relative position in such should secure their zealous and active co-operation. It is not only a duty imposed on the one towards the other, but that which he owes to himself, and to the community at large, to act with prudence and honesty, and to protect the interests of others in common with his own—whether considered as regards the economy to be observed in the management of affairs, or the confidence reposed, and liberality displayed, on the part of those who confide the control of their concerns to others. It is, however, much to be regretted, that too frequent instances present themselves, wherein a want of honesty of purpose, judgment in action, or the absence of practical knowledge and experience cause distrust and disaffection in the minds of others; while the fault may be equally chargeable on the body of shareholders, or adventurers, who neglect their own interests in not first satisfying themselves of the capacity and worth, in a commercial point of view, of those to whom they entrust the application and expenditure of their capital.

We are induced to offer the preceding observations, from the circumstance of a meeting of the shareholders in the "Cameron's Steam Coal Company" having taken place on Friday, the 15th inst., when we regretted to find that the directors and shareholders were at variance *in toto*—insomuch that we feel satisfied, had any one attempted to make up the breach, and to have advanced one step towards reconciliation, he would have been treated by both parties as adverse to the interests of the company. To listen to either the one or other side would have been to arrive first at one opinion, then another, and in the end to be left in a state of doubt, or happy ignorance, as to the real merits of the case; but that there are faults on both sides we believe will be readily admitted by the most strenuous supporter or advocate of the "ins or outs."

We will endeavour to place the matter before our readers so clear, that "those who run may read"—at the same time, we cannot but express our regret, that at the meeting held on Monday last, by the "opposition," although they did not employ "police" to guard the door, and prevent the admission of improper parties, yet adopted a course, we admit, more gentlemanly, but not less exclusive in effect—that of requesting the absence of those who, in giving a fair report of proceedings at meetings like that under notice, do more "service to the state," than the host of lawyers, officials, active, and would-be, managers, with others who too frequently, either blinded by prejudice, or looking after their own interests, neglect those of the parties whom they profess to represent, or serve, and on whom they may be said to be in some degree dependent.

The case under notice is simply this—A company is formed for working a large tract of anthracite or steam coal, and agree to give a premium of 150,000*l.*, with 2000*l.* a year sleeping rent, and certain stipulations are attached to the agreement. Calls, to the extent of nearly 120,000*l.*, in addition to which are proceeds of coal, 8850*l.*; protracted loans, 4000*l.*; short loans, 2650*l.*; bonds, 8000*l.*; and acceptances, 1000*l.*—together, in round numbers, 134,500*l.*, are paid up by the shareholders, of which 95,500*l.* is paid to the vendor in part purchase-money and interest, 4400*l.* royalty, 11,150*l.* plant and machinery, 1250*l.* engineering expenses, 4750*l.* law and Parliamentary charges, 9600*l.* expenditure at the works, freight, &c., 1000*l.* sundry properties, 4700*l.* general expenses, 1200*l.* interest, 4700*l.* salaries, and 2350*l.* in the shape of dividends. Such is the case in a monetary point of view, and with the claim of some further 58,750*l.* on account of purchase-money, a dead rental of 2000*l.* per annum, and certain other contingencies, including 20,000*l.* or thereabouts, for loans, bonds, interest, and sundry items, which must be provided for, certain—or, we should rather say, the majority of the shareholders having appointed a committee to examine into the accounts and affairs of the company, arrive at the very sensible conclusion, that the liabilities are great, that the sum already advanced and allocated is very considerable, and that they have to blame themselves for not having made inquiries in the first instance, instead of closing the stable-door when the horse is stolen.

It appears to us somewhat unfortunate, if the views entertained by the parties are correct, that they did not arrive at this conclusion long ere this; indeed, that they did not do that which we have ever counselled—first to enquire and satisfy themselves of the correctness of the data put forward, assuming such to be erroneous, which, however, we do not for a moment mean to insinuate. It is quite clear, then, that, under any circumstances, without a court of equity relieves the disaffected portion of the shareholders, they are bound to pay to the vendor some 50,000*l.* or 60,000*l.*; there is also owing to creditors 20,000*l.*; a sleeping rent for 99 years from date of lease, as appears by the document before us (although we may be wrong in our deductions as to this point), of 2000*l.* per annum—no inconsiderable item, exclusive of any charges for rents, management, agencies, and other expenses consequent upon the working of the collieries. Against this we have, however, the profits which may accrue from the vend of coal, and which we think, if matters were well managed, would be very considerable, the superior quality of the coal, for particular purposes, being admitted. We should here observe, that the vendor, in part payment of the purchase-money, received 7000 shares paid in full, the residue being payable from the calls made, it being stipulated that interest should be paid, from time to time, on any balance which might be due on account of the purchase-money.

We will not tire our readers by entering into the accounts in detail, nor the very lengthened report presented by the committee. We fear that the shareholders are in "a fix," from which they can only relieve themselves by one bold and united effort—that effort should be to look to the protection of their own individual interests. They have entered into engagements, they have signed the bond, and by its terms they must needs stand, and to which they will be, doubtless, held by the contracting parties on the other side; that they have entered into a bad bargain is most clear, and all that now remains is to make the best of it.

Let us then counsel "one and all." We would say to the vendor, you have obtained, we will not say exacted, terms which, in the opinion of any disinterested party, would be set down as exorbitant. You have received a tolerable sum (say 100,000*l.*) in the way of purchase money, interest, and royalty, in cash and shares. The shareholders have subscribed 120,000*l.*; they are in debt 78,000*l.*, with other obligations, and they have received dividends out of their own capital, for we believe it is not put forward as from profits, 2350*l.* This, then, is a case which must be acknowledged as one of hardship on the shareholder. Take, then, our advice: meet him frankly and openly. Your interests are mutual; the ruin of the one may be said in part to involve the ruin of the other, and we feel assured that you will benefit by any arrangement which may have the effect of bringing about those amicable feelings, without which it is useless to prosecute the workings. On the other hand, we would say to the committee and to the shareholders who support them, do not lend yourselves to the lawyers, or the so-called courts of equity, but make an advance towards conciliation. Let there be a truce, and act upon the principle, which is best understood by the words "give and take." Let the present convivial season be not jarred by the elements of discord between parties whose interests are identical. In conclusion, we trust that the shareholders will take our advice—avoid law, and endeavour to "forget and forgive."

THE BANK CHARTER ACT OF 1844, AND THE INDUSTRIAL INTERESTS OF THE COUNTRY.

III.—THE MERCANTILE INTEREST.

The means to which miners and manufacturers on the continent resort in the absence of a sound system of currency, and a corresponding extension of credit, we shall now detail. They are mainly such as helped our fathers, 60 and 70 years ago, to develope the resources of Yorkshire, Staffordshire, and Lancashire. As a fitting contrast, Glasgow, South Wales, and many mining undertakings in the north-east counties, present themselves as the offsprings of more advanced commercial experience, having been more recently, as well as more rapidly, called into existence. Before the country banks obtained sufficient standing to furnish a local currency, all payments were made by small bills, which circulated, covered with indorsements, from hand to hand. The tradesman furnished the necessaries of life on credit to the small manufacturer and the labourers who were in his employment. The manufacturer cancelled his debt eventually by a draft on the shipping agent, or his town customer, as soon as he had goods to forward. This simple, but, of course, very restricted means of awakening activity and enterprise is resorted to in Silesia, in Saxony, on the Rhine, and in Alsace, and, in short, in all continental mining districts, where the Governments interfere with the natural state of the currency. In the greater part of Germany, the emission of notes is a Goverment monopoly, and, of course, does not reach an extent suited to the demands of trade.

The true origin of credit is the possession of marketable wares by the party desiring to use it. As soon as his possession of any thing saleable is recognised, a man cannot fail to enjoy credit, which he can realise under some of the countless devices that have from time immemorial been resorted to. In the case we have supposed, and which still exists over a great portion of Europe, the untouched ore, or the mere capital in health and industry of the labourer, suffice to induce the tradesman to trust him. From this to the position of a mining company, discounting their bills at a country banker's, and paying wages regularly with notes, is all the difference between a rude and a refined industrial structure. It is like the difference between a sumpter-horse and a railroad. But it does not follow, that because a country cannot command a railroad, that its inhabitants should refuse to trade, as in Peveril of the Peak's time, on horseback, or even as Governors General now do in British India—upon men's shoulders.

The local banker steps forward as the natural guarantee for his neighbourhood towards more central banks in great marts of exchange, as soon as he has obtained sufficient credit at these central marts. This useful office is constantly performed by some rich individual or firm, who do not call themselves bankers. The guarantee for the rising manufacturers of South Lancashire was for many years a predecessor of Mr. Jones, the well-known Manchester banker. Originally the business of that useful house was to keep a miscellaneous shop, at which the bills of the small manufacturers were taken in payment for wares. Indorsed by a rich partner, these bills circulated until they came to London, where they were cancelled by the payments of the shipping houses, or warehousemen. Such are the banking conveniences now at the command of a great portion of the continent. They induce a great dependence of workmen on employers, and of employers on small capitalists. Credit is naturally extremely limited under such arrangements: advances may be said to reach only from hand to mouth, and the power of developing resources is not greater than Prussia, Austria, or Russia, can now put forward in districts abounding in coals and in metals of all kinds. We are forced to ascribe the limited power which Prussia thus commands to the monopoly of the right of issue by the Crown; first, because whatever laws are made on the subject, no Government can command credit for more than the revenues of which it can dispose; and we know that the Prussian paper issues could not be pushed beyond *one-third* of the year's revenues. In the second place, we have only to refer to countries where the Crown does not monopolise issues, or where circumstances place the commercial arrangements beyond the reach of such a limitation, to show that production in such countries is both more extensive and more profitable than in the countries named above. Of the instances where freedom of currency has been of the clearest use to miners, Belgium affords, perhaps, the most striking.* The extent of the iron and zinc production in that country is, in proportion to its size and population, very remarkable. It must also be noted, that the Belgian miners and smelters do not deal with countries that can lend them extraneous credit, or supply them with working capital. They sell almost exclusively to France and to Germany, and are obliged, from the want of both capital and credit in those two lands, to furnish both from their own resources.

Sweden is another instance of the power conferred by good commercial arrangements, the products of the Swedish mines being on the largest scale. Swedish miners are independent, to a great extent, of Government regulations, in consequence of their intimate connection with England which gives them the command of any working capital they may need.

PRODUCTION OF IRON IN EUROPE.

Countries.	Cwts.	Propor. p. head of population.
Great Britain	6,000,000	1 2-5
Belgium	3,000,000	3-4
Sweden	1,600,000	1-2
Prussia	3,000,000	1-5
France	5,000,000	1-7
Russia	6,000,000	1-9

The rapid progress of mining in the United States has been much aided by the unfettered condition of private issues, although their banking credit some years past experienced a shock, owing to the abuses which certain parties have been guilty of, and the effects of which (like the mismanagement of Governments) recoiled upon the industrious community. Great Britain abounds with instances; and, indeed, the convenience which local banks afford to industrial undertakings on a large scale, is so great as to insure a monopoly to localities which command it, that can only be broken through by individuals rich enough to supply the banker's place. The neighbourhood of Glasgow, which has been aided by the Scotch banking system, has made a progress unprecedented, both in mining and in manufacturing. M'Culloch gives a comparative statement, from which the rapid progress of Glasgow after the country bank panic, in 1825, can be traced:—

IRON IN GREAT BRITAIN.

	1825.		1840.	
Blast Furnaces.	In blast.	Out.	In blast.	Out.
South Wales	80	27	132	31
Staffordshire	90	27	123	28
Shropshire	76	13	24	1
Yorkshire	32	12	25	7
Derbyshire	14	5	13	5
North Wales	8	6	12	3
Forest of Dean	7	5	4	—
Scotland	17	8	64	6
Ireland	2	—	—	—
Various (Northumberland)	—	—	5	1

On the other hand, the sufferings of the Forest of Dean, and of great part of Staffordshire and Warwickshire, tell how less favourably situated localities miss the support which was taken from them—first, by the discredit thrown upon country banks after 1825, and, recently, by the restriction of all issues, even those of the Bank of England, to an arbitrarily fixed sum, resting upon no scientific basis, and bearing no kind of proportion either to the resources or the intelligence of the country.

The miner or manufacturer is, beyond all doubt, best situated where local banks afford facilities for all his daily and weekly transactions, and guarantee the credit of sound undertakings, or give warning against wild speculations to the central banks and money marts. A country that has once attained this refined organisation of trade is in no state to abandon it, even if it be required to do so. Enterprise has been awakened, profits have been calculated, wages have been raised, and it is not in human nature to abandon such a position for the small scale of transactions which afford scarcely a pipe and tankard to the adventurer, with black bread and sour beer to his miners. The parties who have every advantage on their side when competition is reduced to the rudest weapons, are those who are most rudely educated; and such a match it will be eventually, if, with our growing population, we retrograde in commercial organisation to the stage which our Germany neighbours have never left. But these, again, have another advantage that we have parted with for the more useful and ingenious contrivance of country notes. The whole system of little country bills, with their accumulation of indorsements, which supplies the place of a proper paper currency in those lands, cannot at once be substituted where notes are taken away. The great miners of Cornwall, Wales, or Staffordshire, would be long in digesting the necessity of requesting a captain of a gang, or a small tradesman, to take a little bill at some months date for the oil, powder, or even the coals used in their works, but still less would they like to offer such for wages; and yet, since these means are resorted to by their rivals, they cannot deny that, if they do not command better, they will be at a disadvantage. It is, therefore, the security of the better—*i. e.*, of the more refined system, which it is everybody's interest to defend, whether against repudiators, or theorists, who wish to impose their projects on their fellow men. The simple rule holds good here, as in everything else, that a man has a right to his own way of doing things, if he do no mischief to his neighbour. Let any man issuing false bank notes, or such as he cannot redeem, be punished in any way the severest legislator suggests. Such a law is a very different proposal from a prohibition of issues beyond a certain figure. Mining property and miners' wages are more like than any other branches of industry to feel the effect of the limitation of issues, that the length of returns in many cases, and the magnitude of the outlay required in others, are greater proportionately than in most other manufacturing processes. If to this we add the curtailing the period of credits in the mercantile world generally, which is likely to limit the export trade to ready-money transactions, it is easy to calculate the disadvantages which threaten our mining interests. The advocates of restriction are, it must be owned, very consistent in their schemes. It is not enough to limit the aid afforded by the Bank of England; the credit given by shipping houses must also be shaped into a monopoly, by driving all small beginners out of the market. The experience of the last year has given a foretaste of what is likely to happen when a revived demand increases the value of circulating capital, and, of course, renders those who command it nicer in their choice, and more exorbitant in their demands. On the other hand, if the Batavian and the Brazilian are also to pay for all they get in hard cash, there is no reason why they should not go to Hamburgh and the Rhine instead of Birmingham and Sheffield.

* A German periodical stated, in 1844, that a German Government, in that year, having received a low tender of rails from Belgium, offered the same price, with the addition of the duty (7*l.* 3*s.* per ton) to a Rhenish house, which refused the contract, although the price of iron in Belgium is always higher than in England, by the freight and shipping and landing charges.

ON THE IRON ORES OF FRANCE.

The iron trade appears to be of considerable antiquity in France. Ancient documents attest the fact, that previous to the commencement of the Christian era, the foundries of the Gauls had already acquired considerable importance. Julius Cæsar, in the account which he gives of the memorable siege of Bourges (Avaricum), particularly notices the manner in which the besieged worked the subterranean galleries, for the purpose of undermining the works erected by the Romans, and adds, that the inhabitants had acquired this skill from their being accustomed to working the iron mines of their country. Strabo, who mentions but very cursorily the inhabitants of Western Gaul, between the Loire and the Garonne, particularly notices the existence of large establishments for the manufacture of iron, worked by the inhabitants of Berry and Derigord. Under the *ancien regimé*, the manufacture of iron was developed only to a limited extent, commensurate with the limited progress of manufactures generally. It was not until the time of Napoleon that it commenced that career of extension which it has now attained. During the imperial sway, the continued warfare with which France was engaged with other countries, gave the native forges the exclusive supply of the wants of the country. When peace was restored, it was found that Sweden, and more especially England, had made such progress in this manufacture, that it was necessary, in order to prevent the total ruin of the iron trade at home, to impose restrictive duties on the importation of foreign iron. Of late years, the production of iron has received encouragement from the demand for supply of the railways, and, in 1840, had attained to 3,771,000 metrical quintals, or 377,000 tons; whilst the produce of England was 1,200,000 tons; that of Sweden, 180,000 tons; Russia, 200,000 tons, and Prussia, 120,000 tons. Iron is found in 59 out of the 86 departments of France.

In the south-west, the departments of Ardennes, of the Meuse, and of the Moselle, are the richest in iron ore; they furnish a large proportion of either granular or compact hydrated oxides of iron, and but little of the anhydrous peroxide. The coal mines of the north produce a carbonate of iron; the Pas de Calais and the Oise contain only a few workings of hydrated oxide. To the north-west, the hydrated oxides in fragments are found in the departments of Eure, Orne, Sarthe, and Mayenne; the brown hematites, oxidulous iron, and a compact peroxide, in the departments of Calvados, Côtes du Nord, Morbihan, and Loire Inferieuse. The Vosges, and the parts south-west of the Moselle, are rich in compact anhydrous peroxide, in brown manganesic hematites, and in spathose iron ore; whilst the Bas Rhin is characterised by the presence of earthy hydrated oxides. Eastward, the departments of Meuse, Haute Marne, Haute Saone, Jura, Doubs, and Côle d'Or, are remarkable for their innumerable mines of granular hydrated oxide of iron. In the centre of the kingdom, the departments of Saone and Loire, Nievre, Cher, and Allier, present the same characteristics as the latter group. Westward, in the departments of Loire and Cher, Indre, Vienne, Deux Lêvres, and Charente, the same ore presents itself. Descending towards the south-west, we still find the granular hydrated oxide to be the prineipal ore of iron, in the Charente, Dordogne, Lot, Lot and Garonne, Landes, and Jarn and Garonne.

In the south-east we find spathose iron ore in the Puy de Dôme, oolitic hydrated oxide in the Ain, compact red oxide and red hematite in Ardêche, argillaceous hydrated oxide in the Gard, and lithoid carbonate of iron in all the coal basins of the Loire. In the Alps, the northern part (Isère) is rich in spathose iron. The southern part (Vaucluse) Basses Alps, contain the hydrated oxide in fragments. Lastly, the south is characterised by the union of the richest and purest ores; l'Herault furnishes the oxidulous and olegiste iron; l'Aube the hematite; the Pyrenees Orientales, l'Ariége, and the Hauts Pyrenees yield spathose iron, brown hematite, and compact hydrated oxide. In this brief account of the nature of iron ores in France, we cannot but be struck with the fact, that although all the varieties are largely represented, yet the extreme profusion of the globular or earthy hydrated oxides claim especial attention, for to that circumstance must be attached the extensive and easy progress which the iron manufacture has made; their extraction from the mine ordinarily inexpensive, their great fusibility, their average richness, and their good quality, allows of their being heated in furnaces of but little height, requiring but little draught and little charcoal; so that in all the first group rich in wood, such as Ardennes, Marne, Franche-Comté, Berry, &c., an immense number of works have sprung up: all the water power, however feeble, has been eagerly sought after, and employed either for washing the ores, or for the blasts of the numerous furnaces in which they are heated. Things would, indeed, have presented a very different appearance here, had not Nature bestowed on France this great privilege with regard to the constitution of her ores. Mining undertakings would have required greater outlays in the erection of works—expenses which small capitalists could not have grappled with; so that until the spirit of association for commercial enterprise was awakened in France, which has only been within the last few years, and extensive establishments formed, a considerable number of the mines must have remained unworked, and France would not have been so forward in the iron manufacture as she at present is, and less able to stand competition with foreign countries.

The greatest difficulty which has hitherto existed, and which in some parts still exists, is the want of communication by means of canals and railways, the progress of which has been retarded, not only by the absence of a spirit of enterprise in the people for undertakings of large extent, but from the direct obstacles which have been thrown in the way by successive Governments, who it would appear are afraid to permit to the people too free an access to each other and to the capital.

In England we we have good means of communication, and the advantage of finding in the same geological formation both the mineral and the fuel; but the extraction of the ore is expensive, difficult, and rarely advantageous with respect to the quality of the products; whilst in France the extraction and working of the mineral is done at little cost, and their value is almost entirely due to the carriage, which the establishment of good means of communication will tend considerably to lessen.—E. H. D.

SUPERFICIAL PRODUCTION OF METALS;

OR ALLUVIAL METALLIFEROUS DEPOSITS—NO. III.

BY E. HOPKINS, C.E., F.G.S.

The Cornish miner, more especially in the stanniferous districts of Cornwall, is so well acquainted with the character of the crystalline rocks, that he knows from mere appearance of a specimen what kind of granite will produce tin. Schorl appears to be an essential ingredient, or, at all events, a constant associate of the oxide of tin.

Near St. Austell, Dartmoor, and the Land's-End, the oxide of tin is in some places so much disseminated through the schorlaceous granite as to induce miners to quarry it for the extraction of the tin. All the metals that are found in this disseminated state are always more pure than when they are found in veins. It appears that those elements which produce joints and fractures, and the formation of veins in the crystalline base, effect the accumulation of the metals in the recesses, at the expense of a considerable amount of alloy of mineralising substances, such as iron pyrites, the arseniate pyrites, &c.; consequently, metals obtained from veins are never so pure as those procured from the decomposition of metalliferous rocks; when dispersed in the latter, the metals are comparatively unalloyed.

The stanniferous, like the auriferous, rocks are often very friable, and subject to disintegration; the felspar decomposes into clay, according to the character of its component parts, an exfoliated oxidated crust is formed, which is gradually washed down to the ravines, where the several substances are deposited according to their respective gravity—the oxide of tin, being the heaviest, will occupy the lowest beds in each accumulation. There was a time when miners did fancy that these alluvial deposits of minerals came from lodes, and geologists consider lodes as volcanic productions; but, fortunately, for our industrial science, such erroneous notions are now almost matters of history. Some vain attempts have been made to determine the age of this superficial detritus of stream tin, and its associated gravels, but to no purpose; it is like that undefined and improper term, *tertiary*—it belongs to all ages.

Sometimes we find the tin-stone pebbles, the comminuted quartz grains, and the oxide of tin, left behind on the parent rock, and the decomposed felspar washed away; and this covering becomes so thick as to prevent further decomposition.

In the Indian Archipelago the same phenomena occur, as observed in the Island of Banca. This island, with its ridges, conforms in its direction to the Asiatic ranges of mountains, and is composed principally of granite, both ferruginous and schorlaceous—the predominances of the former giving it a general red colour. The oxide of tin is disseminated more or less throughout the schorlaceous granite, and is found in beds at the foot of the granitic range, either immediately under the surface, or at no great distance below it—the greatest accumulations are mostly found in low situations near the schorlaceous ridges. These deposits are composed of clay of various colours, from pure white to yellow and red. The most productive beds of tin ore have been found near the central parts of the peninsula, at the junction of the districts of Sungie-bulu, Klábbet, and Tengá.

The lowest bed is generally of the purest white colour, very light, and adheres strongly to the tongue, like pure clay, on which the ores of tin are deposited in layers differing in richness and extent, according to the locality and the quality of the parent rock. Sometimes the tin is found dispersed through the whole of the bed, commencing immediately under the soil, and increasing in quantity towards the bottom. The schorl *in* the granite is often seen in black strings, intersecting each other at different angles, and also in elegant needle-form crystals adhering to the fragments of quartz, and likewise disseminated through the quartz in minute rhomboidal crystals, which renders the granitic mass loose and friable. In some parts the minute particles of schorl are barely perceptible; in other portions this substance is uniformly mixed throughout the stone; and again, the granite changes into a different compound, in which schorl cannot be detected.

In all the stanniferous granitic rocks the mica is but sparingly distributed, the only admixture with the quartz and felspar being schorl in variable proportions. The exfoliated beds formed by decomposition *in situ*, on the surface of the granite, consist of fragments of quartz and felspar, with small particles of schorl, and the ore of tin. Sometimes coarse fragments of decomposed granite are seen with breccia, through which the oxide of tin is disseminated. The productiveness of the deposits of the valleys gradually diminishes as the acclivity of the hill increases, similar to that already noted in gold washings, and thus plainly show the origin of these alluvial metallic deposits. These superficial processes of decomposition are constantly going on, on a large scale, in Chili and Australia, and, more or less, in every region on the face of the earth, where the primary rocks are exposed to the atmosphere. Those geological works, treating on sedimentary rocks and their fossils alone, are totally useless in the southern hemisphere, inasmuch as such series of secondary rocks do not exist in that part of the world.

In Australia, and other countries in the same parallel, we have only the crystalline rocks, irregularly covered with their respective detritus, in a state of partial consolidation, enclosing the relics of the existing species of that region. Your correspondent of Adelaide, Mr. J. Phillips, may well state, "there are the extremes of primary and tertiary formation, with no discovery yet of any intermedite order." The whole appears to have been recently emerged from the sea. His description is equally applicable to the southern part of America, and all the islands in the same zone.* Near Adelaide there are great meridional bands, and isolated patches of cupriferous rocks, from which copper has exuded, and has been mineralised by oxygen and carbonic acid, and formed great exfoliated beds on the surface, which are now worked with great profit, more especially at the Burra Burra Copper Mine. This great and rich deposit is situated in a kind of basin, about 50 acres in extent, and surrounded by hills on every side, except the Burra Creek. In this immense mass is seen malachite, red oxide, and the green and blue carbonates, mingled in rich profusion. These superficial deposits are like gigantic gossans on the back of wide north and south bands of metalliferous rocks. From what has been stated, it will be evident, that geological works, *treating on sedimentary beds and their fossils*, are only useful in their respective parallels, where such beds exist—therefore, when we reflect how vague the primary rocks are generally treated, miners have ample reason to complain that such books are of no use to them, neither in Australia, Brazils, or Chili, in questions connected with the sedimentary rocks, and much less as regards crystalline rocks and mineral veins; and I feel gratified to find that my small imperfect work† has been so useful, and is now so much appreciated in *all* parts of the world by the miner, for whom it was intended, to give him some light, although dim, in his arduous and intricate subterranean labours.

[To be continued in next week's Mining Journal.]

GAS METER FOR THE HOUSES OF PARLIAMENT.—A view was afforded to a number of scientific persons, and others interested in the consumption of gas, on Tuesday last, at Messrs. Glover's iron-foundry, Drury-lane, of the immense meter constructed and cast under the superintendence of Mr. Defries, of St. Martin's-lane, the inventor and patentee. This machine, which is to be placed in the New Palace at Westminster, is an almost stupendous piece of mechanism, being upwards of 10 feet in height and 20 feet in circumference of girth; it is in form a hexagon, the designs are in the Gothic manner, and in exact keeping with the interior of the New Houses of Parliament, so that it is an ornamental as well as a useful addition to them, and ought to be placed so as to be seen by the public. The machine weighs 4 tons, and is of capacity to pass 10,000 ft. of gas per hour, and of supplying 2000 lights with, according to calculation, the loss of only half a tenth of pressure, at which pressure it will work with the greatest ease. The principle and the action of the machine are very simple, and yet very accurate. There are two chambers, the lower containing three partitions, called diaphragms: as the gas, in its passage through the valve, acts upon these diaphragms, they move the machinery in the upper chamber, and by these means the quantity of gas consumed is registered. The index consists of six small dials almost similar to those of watches; on these, the consumption can be calculated with very minute accuracy. The iron has been bronzed, and has a fine surface, the castings being remarkably sharp and clean. The name of the patentee, and the title of the Chartered Gas Company, and the Royal arms are introduced. This meter far exceeds in dimensions anything of the sort ever before attempted.

* See my work on this subject, pages 79, 80, 102, &c., in which the recent appearance of the southern formations are alluded to, with their apparent cause. Mr. Phillips's letter is very interesting, and it is to be hoped that he will, from time to time, furnish us with a further description of the mineral character of that country.

† "On the Connection of Geology with Terrestrial Magnetism: showing the General Polarity of Matter, the Meridional Structure of the Crystalline Rocks, their Transitions, Movements, and Dislocations, including the Sedimentary Rocks, the Laws regulating the Distribution of Metalliferous Deposits, and other Magnetic Phenomena." Published at the office of the *Mining Journal*, price 10s. 6d.

Original Correspondence.

COPPER SMELTING.

SIR,—Having been from home, I did not see Mr. Prideaux's letter of the 4th inst., in time to answer it in the last week's Journal. I beg to inform that gentleman, that the order of oxidation of metals in the smelting furnace fully corresponds with that of the blowpipe; and to show that it does not depend in any way on the action of the charcoal, the same phenomena will exhibit themselves if a portion of the alloy—say, 400 grs. or 500 grs.—be exposed in a muffle to the action of borax, or any suitable flux in shallow crucibles or biscuitware dishes; and that a nearly perfect separation of the metals will take place, except in the case of manganese, which, unless present in large quantities, is nearly all absorbed in the flux, simultaneously with the iron, as I have stated, the equivalents being so nearly equal.

I grant that cobalt will disguise the colour given by other metals, if all are in the state of oxides; but cobalt will not enter the flux (or rather is precipitated therefrom) so long as any of the inferior metals are present in the metallic state. I will send Mr. Prideaux a portion of the alloy, then he will be able to satisfy himself.

The above phenomena will take place if the metals exist in the alloy in any propertions, only that then there will be fewer or more saturated glasses, according to the quantity of one or other of the metals; at least, I have found it to be the case with the blowpipe, crucible, and furnace. I admit the correction—viz.: that the peroxide of iron gives a yellow glass.

Birmingham, Dec. 21. A. MERRY.

P.S.—It is well known that scrap copper, when recast in a crucible, will not roll without the addition of a little zinc. I consider the action of the zinc is to reduce the oxide of copper alloyed, at the same time that it becomes (at least a portion of it) itself oxydised.

THE NEW SMELTING COMPANY.

SIR,—The mining interest is certainly much indebted to the lucid and able letters of Mr. Palmer Budd, which you have inserted from the *West Briton*. The first step to the amendment of real grievances is the detection of those which are imaginary—two chimæras having vanished before Mr. Budd's touch, there is more hope of attention being directed to real difficulties. I have watched, with much interest, in your pages for some months, the proposals for establishing a new copper smelting company; but, amid conflicting statements, I have only been able to ascertain two points as perfectly clear—first, that there are individuals desiring to share what they consider the vast profits of copper smelting; and, secondly, that the miners are desirous of reaping a better profit on their sale of ores. Both these objects are perfectly legitimate in themselves, and the attempt to carry either of them out is in the fair scope of mercantile enterprise. But they are *entirely distinct objects*, and I think the manner in which they have been confounded can only lead to failure in both. The projectors of the new company do not court support merely upon the plain footing of a profitable investment; but they hold out likewise to the mining interest the inducement of their obtaining a better price for their produce. Now, it appears clear, giving credit for the sincerity of their promises, that directors labouring under such a confused belief can command no confidence of a successful undertaking. Let the company first be *established*—I will not say against the monopoly of those now existing, for it is surely absurd to speak of *monopoly* in any trade which lies perfectly open to the competition of intelligence and capital, but against the advantage of being *already established*—let the directors conquer the enormous disadvantages of joint-stock management in such concerns, and *show themselves* in possession of the anticipated returns; *then* will be quite early enough to consider or speculate on the application of their superabundant returns. If, when the company has thus *realised* its position, the directors and shareholders think proper to discuss what portion of their profits shall be set apart as a bonus or bounty to the mining interest, for the purchase of inferior ores at superior prices, it cannot at least be said that *their fish is not caught*. If the shareholders, or a *majority* of them, shall assent to this generous sacrifice, the next point for their determination will be the mode of *distributing* the bounty—which favoured mines are to participate in the charitable benefaction. The company being, by the hypothesis, above motives of self-interest, the award will have to be made by an impartial decision upon testimonials, the depth and age of mines, the cost of working, former and present losses by flood and field, poverty of the ore, &c.; their comparative claims will be investigated, and, in examining them and giving satisfaction to all the applicants, I conceive the company, with this addition to the ordinary business of making and selling copper, will have nearly enough to do. Absurd as these conclusions are, can any one show any other way in which a smelting company, established for the benefit of the miners, can effect their object? It may be intended to operate on so gigantic a scale as to annihilate the present establishments, by forcing up the price of all the ores, or at least from all the worst paying mines, leaving only the produce of the most prosperous for the smelters. Of such a scheme it may at least be said, that it is very easy to construct it upon paper. Even this, however, will not comprehend all the features of the prospectus; for one of the inducements advanced is the great profit to be gained by smelting *foreign ores*. In what way does this accomplish the consistency of a plan which is to benefit the British miner? In short, the views proposed are a swimming against the stream, and reasoning backwards upon mistaken principles. For if the present smelting trade receives a larger profit than is properly due to the interest of capital, the risks of trade in a fluctuating commodity, and the other elements which make up the usual calculations of compensation, a lowering of those profits by the completion of new companies will benefit the *consumer*, not the *miner*. The price of copper *will fall*, by inducing an enlarged consumption; this would encourage the opening of new mines, but a full counteraction of such benefit to the mining population would immediately arise in the abandonment of those mines which could not yield a profit at the reduced prices, and an effect would follow which invariably takes place when the profits of the manufacture of a fluctuating article, dependent as copper is for its price upon the vicissitudes of our general prosperity, are reduced by competition to the narrowest margin; the producers of the raw material would feel those vicissitudes *more severely*. The smelting interest is not opposed to the mining interest, but it is *distinct* from it. A smelter, like every one else, must do the *best* he can with his business; and he who sets out with the profession of conducting his business, not for the advantage of himself, but of some one else, will soon find he will have none to conduct.

The other distinct interest (or rather the only interest, for persons desiring to create a company cannot yet be called so) which is moving the present question, are the miners; but their expectations are equally fallacious, if they consider they will derive any solid or permanent advantage by holding a smelting establishment, in order to devote a portion of the profit to maintaining mines not otherwise workable. To pay themselves a higher price than the market would afford for their own ores, is merely passing their money from one hand to the other. The charges on raw material accumulate so fast in subsequent processes, that it is the greatest object to keep this first cost as low as possible; and it is impossible to say to what ruinous results a wilful departure from this principle may eventually lead. It would be far safer for a smelting company, *devoted to the interests* of the miner, to set apart a share of profits, *after they have realised* them, to distribute among the needy, than enter upon the confusion of a nondescript business, which would, like the monster Caliban, be neither fish nor fowl. It really is not surprising if, as Mr. Budd asserts, the smelters are found to assume a degree of indifference towards assailants who expose such crude views of business. Allusion has been made to the advantages derived by other smelters, as the ironmaker, in combining the mining and the manufacturing departments; but no ironmaster thinks of establishing works that he may carry on mines which could only be wrought by the loss of a portion of his profits. An iron smelter gets his materials as cheap as he can; and a copper smelter, with whatever professions or notions he may set out, must eventually do the same. A reflection has been cast on the copper miners, as if it were through their own neglect that they do not carry on the combined operations; but, in such a comparison, the natural differences are overlooked. Were veins of copper, stratified with the regularity of iron ores, and the fuel found alternating with the metal, such a union would have been effected long ago. But who would think of embarking capital to smelt the ores of one particular copper mine? Their uncertainty is so great, that the risk is met by the greatest subdivision of shares, reducing to the smallest sum the amount of individual liability. No smelter would stake success upon the purchase of an ordinary copper mine, and a prize mine no smelter could purchase. The proprietors of the latter would not care to be incumbered with smelting operations; the former could not support their weight. The miners are suffering under the severe depreciations of the past year; and they appear, as is not an uncommon case, to feel an irritation against the channel through which that depreciation reaches them; they are, likewise, exposed to a most serious competition from foreign ores. I have no interest either in copper mining or smelting; but it is impossible not to feel alive to the welfare of so important a section of our countrymen as the inhabitants of Cornwall. With that feeling, I have ventured to state what appears to me to be fallacious in their hopes of relief, that attention may be directed to a sounder basis. There appears no *new feature*, in the addition of one more to the seven or eight smelting companies already existing, which can warrant the expectations held out from it. I should far rather expect, that such a permanent advantage to the county must have its use in enhancing the absolute value of her products through improved applications of mechanical and chemical science.

Dec. 13. DAVID MUSHET.

Errata.—In my letter, on "Carbon and Iron," for "*combustion* of (say) 5 per cent.," about the middle, read—"*combination* of (say) 5 per cent." A few lines above, for "or its development," read—"*for* its development."

THE COPPER TRADE.

SIR,—I am much gratified to observe that the discussion of the copper trade question has been taken up by Mr. J. Palmer Budd, who, as he informs us, had the most favourable opportunities to acquire, from a highly distinguished teacher, a thorough knowledge of all the details of this business, and whose acknowledged reputation as a scientific smelter, and acute man of business, has proved that the pupil was not unworthy of his tutor.

I quite agree with Mr. Budd's sentiment, that the proper understanding of this question has been much retarded by the want of good feeling between the parties engaged in mining and those occupied in smelting the miner's products; also, that this absence of good feeling has been prolonged by the use of disrespectful expressions in relation to each other. Let us hope, Sir, that the example set by Mr. Budd may be adopted in all future discussions on this subject. I observe Mr. Budd considers that there exists a surprising ignorance of the plainest facts and details of the copper trade, and this remark is illustrated by reference to the supposed mysteries of standard, returning charges, surplus, &c., &c. Now, I take it, that all parties interested in the sale of ore are fully aware that if they sold 20 cwts. for the ton, instead of 21 cwts., they would only receive from the smelter a proportionate amount per ton; still this does not alter the fact that 21 cwts. of ore are sold and delivered; and this fact must not be lost sight of in calculating the actual quantity of copper obtained by the smelter. These parties are also aware that the arbitrary addition of an unvarying sum of 2*l.* 15s. to the cost of a ton of ore, as a presumed returning charge, is made solely for the purpose of calculating what is called the standard, and has no reference to the actual expenses incurred in transporting and smelting a ton of copper ore, and in rendering the copper into the market.

It is in relation to these actual expenses, Sir, that the miner requires more exact information; and, if Mr. Budd could feel himself at liberty to communicate this knowledge, I am confident my brother miners would be sensible that he had imposed a boon on his native country. In the mean time, and with the existing state of doubt, the miner believes, as Mr. Budd expresses it, *that the profits of the copper smelters are excessive, and, consequently, that the miner does not obtain a fair price for his ores.* As I have no hope that Mr. Budd will elect to divulge the information I have referred to, I will endeavour to exhibit what amount of *actual returning charge* the copper smelter takes to himself, as an equivalent for expenses incurred in the freight of ore and in the smelting operations; also, for the employment of his capital and business talents as a smelter and copper merchant. For this purpose, I will select the sale of ore which took place at Redruth on the 7th inst., where I find that the average price for 21 cwts. of ore was 4*l.* 6s., and the average produce 7½ per cent. Provided the ton of ore had been 20 cwts., and the yield only equal to the quoted per centage, then 13¼ tons would be required to yield 20 cwts. of copper; but, as the ton of ore contains 21 cwts., this quantity would give 21 cwts. of copper. The next item of calculation is *really one of mystery*, and has hitherto been carefully veiled from the miner—viz.: *the surplus produce of marketable copper obtained by the smelter above that which is reported by the assayer*; and it is upon this point that the miners would have felt most particularly grateful to Mr. Budd, if he had enlightened them with his experience.

However, the untoward course of an establishment which was, at one time, looked up to as calculated to protect the miners' interest, and which, in my conviction, lost its commercial position solely by deviating from the legitimate objects for which it was formed, has afforded opportunities for others than smelters to become acquainted with this arcanum of the trade; and when I state, that the results of regular workings, conducted with only ordinary management, have proved that the average produce of copper *obtained and sold* exceeds by one-tenth the produce reported by the assayers, on which the miner sells his ore, I know that this statement is founded on experience. We have, therefore, to calculate on 5 per cent. for surplus produce, arising from extra weight, and 10 per cent. for surplus produce, as compared with the assay—together, 15 per cent.; consequently, the 13¼ tons of ore, reported as of 7½ per cent. produce, would yield 23 cwts. of marketable copper, which, at the present quoted price of 79*l.* 10s. per ton for cake copper, would amount to 91*l.* 8s. 6d.; and, as the average price of the ore was 4*l.* 6s., the cost of 13¼ tons would be 57*l.* 6s. 8d., which, being deducted from 91*l.* 8s. 6d., leaves 34*l.* 1s. 10d. *as the actual returning charge* on 13¼ tons of ore, or 2*l.* 11s. 2d. per ton—being not much less than the "mysterious" 2*l.* 15s.

The deduction which I draw from this calculation is, that the miner is perfectly justified in his belief, that the profits of the copper smelter are excessive; and I, therefore, hail with satisfaction the promise of a new smelting establishment, which, it is to be hoped, will introduce such a healthy competition into the ore market as will secure a fair price to the miner for his hardly-earned produce. Although I may have exhibited presumption in attempting to deal with a subject on which Mr. Budd has employed his pen, I can assure you, Sir, that I shall have much pleasure in seeing the matter further pursued by that gentleman.

London, Dec. 13. AN ADVENTURER.

MINING AND SMELTING.

SIR,—I have, from time to time, read with great interest the various communications which have appeared in your valuable Journal regarding this branch of national industry. Not the least important of these was a letter from Mr. Abbott, which appeared in your Journal of the 9th inst. It has long been a notorious fact that, however superior we may be to other nations in machinery and manufactures, in a chemical knowledge of minerals and their component parts, with a practical application of them, we are immeasurably below our foreign competitors. This, I conceive, is mainly to be attributed to the deficient and incomplete education our miners and smelters receive—most of the agents of mines, and many of the refiners in the smelting-works, having been raised from simple labourers to be superintendents, have no other qualification than practical experience; though I am far from underrating this, and am willing to allow all the meed due do it, and am perfectly aware that many of our greatest mechanics have been drawn from the labouring classes, yet they have been the exceptions to the rule, having been men of extraordinary energy and enterprise, who have afterwards, by theory and subsequent education, improved the groundwork which their genius had laid. It has generally been considered, in England, that if a man is sober and steady, and a good practical miner, though he can scarcely write three words consecutively correct, that he is capable of becoming an agent.

Had Sir Charles Lemon's project of erecting a mining college not been frustrated, no doubt, in a few years, a more competent race of individuals would have been found. Although the practical part of mining is simple enough, yet, as it is an occupation which requires many scientific acquirements in order to attain any eminence in it, why should not some examination as to qualification be required in that as in every other profession. Until some period after the revolution, so backward were our mineralogists in Cornwall, that yellow copper ore was considered of no importance, but thrown away as mundic. Such lamentable mistakes as this have, I believe, never been made on the continent; and even now, at this present time, while metallurgy is making rapid strides there, our leading men are content to proceed in the old system, and neglect the improvements which are daily passing before their eyes.

In those countries, the mines are more or less under the control of the state; how far such a power would be applicable, or useful, here I will not now pretend to say, but leave it as an open question, subject to further discussion. But there is one convincing fact, that while in England our most prosperous mines are comparatively modern, in Germany, and other countries, they have been worked (with the exception of during wars and intestine commotions) for centuries. In going from one end of the mining district in England to the other, we hear that, at a certain spot, "there was

a rich mine, which was abandoned 50, or 20, years since," as the case may be; and this is by no means a singular occurrence; in many cases these have been resumed; and, after spending several thousand pounds in forking the water, the adventurers have found the mine to be worthless, their capital expended, their patience exhausted, and an additional stigma cast on the mining character: such instances scarcely, if ever, occur on the continent. From whence does this arise?—From the incompetency of those at the head of affairs. Was every mining proprietary obliged to deliver a plan of the workings of their mine, previously to abandoning it, to proper constituted authorities, great dishonesty would be prevented, and much useless expense avoided: did our miners know the proper value of the minerals they are working, greater profits would be given to the adventurers, and a more permanent benefit be conferred on the mining population. In all the works in Germany, the miners who are placed in any official situation are required to be able mineralogists, and the smelters competent chemists. If such was the case here, I believe that a great deal of that reckless waste, so ably pointed out by Mr. Abbott, would be avoided. If the separation of the different metals in a mineral, and their practical application, was a new theory that was broached, it might be subject to some suspicion, and should be received with due caution; but while it is so well known, and can so easily be seen at the Hartz Mountains, which is but three days' journey from London, it is surprising that the mining interest have looked on with such apathy, and thrown wantonly away thousands of pounds, which from want of knowledge have not been made available. In these mines, which contain ores with gold, silver, copper, cobalt, blende, and iron disseminated through them when delivered to the smelting-house, if any of the mixed metals are found by analysis to be of sufficient value to pay for the extraction, they are separated, and form a profit on the general account. Nearly every mine, or mining establishment, has its own works, and I apprehend that the cause of the great antiquity of the German mines is to be deduced from the fact that they have, on every occasion, profited by their resources, availed themselves of whatever was useful and marketable, instead of sacrificing all the other metals in order to obtain that which gave the greatest produce, and from this economical method of working, they have been able to withstand the fluctuations at different times of bad courses of ore, and dead ground, to which every mine is liable. That the present smelting companies would oppose such a change is not to be wondered at—it would cause such a revolution in the whole machinery of their operations—such an entire revulsion in their whole system, and embrace so comprehensive a change, that one cannot be surprised with the large capital they have at stake, giving its present large profits, even though a greater prospective gain was held out to them, they would be induced to risk it by any change, however feasible it might appear. Should the new smelting company be formed, it probably might be induced to commence a new *modus operandi*; but as they start solely as a copper smelting company, there is no guarantee that they would give the miner a better price for his produce than he at present obtains, or that any improvements would be practised by them, to utilise the whole of his produce, and ameliorate his present deplorable condition. I am rather inclined to believe that they will only be adding one more to the monopolists we already have. If the miners would look to their own interest, they should protect themselves, irrespective of any of the old companies already established, or any new ones projected. The capital required for the establishment of small smelting-works is not so enormous as generally imagined, nor are the difficulties of separating the different metals so complex. If some of our larger mines were to erect works merely to reduce their own produce, in a few years they would reap the benefit, by obtaining the whole of their proceeds, and increasing, in no little degree, their profits. There is no mystery observed in the manipulation—steam and railroads have annihilated distance; let those who doubt, go and judge for themselves in the Hanoverian works, where, without the slightest difficulty, they will see the processes all in operation. I shall, at some future period, forward some other remarks on this subject; but as Mr. Abbott so fully pointed out the deficiency of the present system, I should be happy previously to see what those who are of a different opinion to that gentleman may advance.—DELTA: *Paddington, Dec.* 19.

COPPER SMELTING.

SIR,—I notice, in the last Journal, a letter from "P. I.," professing an inclination to join the new smelting company, if he can satisfy himself that the profits of that trade are so enormous as they are said to be; and he exemplifies his doubts by a calculation that 13½ tons of copper ore, of 7½ per cent. produce, sold for 4*l.* 6*s.* per ton at Redruth, on the 9th inst., or 58*l.*; while its whole value in copper (1 ton) is only 79*l.*: leaving only 21*l.* for the smelter. In making this calculation, "P. I." says, he drops the phantom standard altogether. Has it occurred to him that this appropriate term might be applied to the "calculated" produce also; and hence an uncertainty arise of the correctness of his result? In fact, his first inquiry should have been to ascertain whether copper ores sold at the ticketings are not really placed in the position of goods sold by auction to the highest bidder, but subject to the disadvantage of the standard and prices being previously agreed upon by the said bidders, or purchasers, who put in their offers accordingly; after which, the produces of the parcels are fixed. If this be so, "P. I." has great inducement to invest his money in smelting; but he will be very much more encouraged when he is informed, that the smelters' calculation for the produce in the ore is at 20 cwts. to the ton—that the copper of trade is considerably short of purity—that the assays are so highly refined as not to represent the full contents of the ores purchased. I have stated some of the leading points from which the adventurers in copper mines believe they suffer; and, if I am rightly informed, there is a large margin of profit left to the smelter, after he has retained a full and liberal rate of payment for the operation of smelting and refining. Now, surely the miner should be entitled to the balance remaining, after the smelter is secured in a handsome rate of profit. It seems to me that the time has arrived that this much vexed question between miner and smelter, should be set at rest; and it would be far more graceful in some of your recent correspondents, who evidently are interested, or fully understand the details, to bring forward such facts and figures as will, if their assertions are right, show that the miners' impressions are not well founded, than to endeavour to mystify them further by explaining well understood technicalities. Trusting that we may not long languish under the present depressed prices for copper ore, whether from an alteration in the system, or the establishment of additional smelting companies,

I remain, Sir, yours, &c.,

Dec. 19. A COPPER MINER.

PRACTICAL MINING.

SIR,—I should feel obliged if some of your correspondents will favour me with their opinion as to the best and most approved means of applying a small stream of water to the purpose of pumping from a colliery pit, where a fall may be obtained of 30, 40, or 50 feet, and as much water as will fill a trough 24 inches by 6 inches deep.

December 19. A MOUNTAIN COLLIER.

POWER OF WATER-WHEELS.

SIR,—I am at a loss to comprehend how your correspondent, "H. T.," can so hastily jump to the conclusion, that the difference in power of two water-wheels of the same dimensions, the one with the water coming over it, and the other with the water brought in 5 ft. below the top, is "very trifling." As to the water being "properly" laid on, there cannot be much difficulty as it regards the overshot; if there be any, it must be in "properly" laying it on the breast-wheel, as there will have to be a return launder, &c. Let us look, first, at the number of buckets from the centre, or top of the wheel, to the place where the water falls on it, which is 5 feet below—we will say 12, taking the whole number to be 126; which 12 must be deducted from one-half of the whole number, then the deduction from the whole will be 24. Now, if 24 be deducted from the 126, the remainder will be 102, a third of which will be 34, which number, to ascertain the actual weight of water in power, should be the multiplier, and not 42, as "H. T." says, which gives the full power of a 40-feet wheel, with the water coming over it; and not the power of a 40-feet wheel with the water brought on it 5 feet below the top.

I am quite sure the 40-feet wheel will do one-tenth more duty with the same stream of water than the 35 feet, and, perhaps, a little more; but to suppose a 40-feet wheel, with the water on the top, is of no greater power than a wheel of the same diameter, with the water brought in 5 feet below the top, is to me incomprehensible, and is arriving at a conclusion which (all things considered) the circumstances of the case will not justify.

Taking all things into consideration, such as the number of buckets unavailable (with the water 5 feet below the top), with their centrifugal power, in case they were available, and 35 feet being the extreme height a twhich the water can be brought in, I cannot conceive how any practical man can imagine the difference in power of the two wheels to be so great as your correspondent has made it to appear in your Journal of the 16th inst. I hardly thought any man would guarantee more than a ninth increase to be perfectly safe—I will ensure a tenth. W. V.

Callington, Dec. 19.

POWER OF WATER-WHEELS.

SIR,—The power of a given quantity of water, falling a given height in a given time, may be represented by $g \times d$; g being the quantity (weight) of water falling on the wheel per second, and d the height or distance it falls.

A maximum effect is produced when $\frac{g\,d}{2}$ is $= r \times v$; r being the constant resistance, and v the velocity, or space, moved per second—so that $r\,v$ is the actual work done per second.

Therefore, whatever be the diameter of a water-wheel, the work done will be the same, when $\frac{g\,d}{2}$ is $= r\,v$.

This theory admits of experimental proof by model at a trifling expense, and which, if made, will not only be of use to the millwright, but may very possibly help the engineer who has occasion to construct a paddle-wheel steam-vessel.—JOHN CURR: *Dec.* 18.

SOLUBILITY OF THE OXIDE OF LEAD IN WATER.

SIR,—Although much has been written of late years regarding the solubility of the protoxide of lead in water, yet I have nowhere seen any account of the action of steam, or partially-condensed steam, upon lead. This is certainly surprising, after the numberless cases of poisoning by rum containing lead, which once took place in the British West Indies, which ought, one would conclude, to have led to experiments on the subject. As the injurious effects of water which has been kept either in leaden cisterns, or passed through leaden pipes, has lately attracted some attention, it may not, perhaps, be out of place to state a few facts connected with the action of steam and water upon lead which have come under my observation. Some years ago, steam was applied in a large dyeing and calico printing establishment, for heating one of the printing rooms: to the usual apparatus of cast-iron pipes was attached a waste pipe of lead ¾ in. in diameter, and about 15 ft. long. Very soon after the steam, and that which was condensed, had traversed the lead pipe, a copious white deposit took place upon the slates of the roof of an adjoining building, over which the distilled water trickled to the gutter.

On examining the deposit, I found it to be composed of carbonic acid and protoxide of lead; the boiling hot distilled water from the lead pipe was collected, and tested with sulphuretted hydrogen, when a deep brown colour was produced. This was so deep a colour, that I have ever since entertained the idea that water at a high temperature may, as it does with most other substances, hold in solution at least twice as much protoxide of lead, or 20 grs. per imperial gallon, as it can at 60° Fah. I regret that I did not determine the precise quantity of oxide held in solution; but am satisfied, from the appearance of the precipitate, that steam and hot water corrodes lead at least 20 times as fast as pure water at the ordinary temperature. As this lead pipe was only about 15 feet long, we can easily conceive how dangerous it must have been at one time to use leaden worms for condensing the vapour of alcohol and water in distilling apparatus.

Though many facts, as to the action of pure and impure water upon lead, which were at one time an anomaly, have been elucidated by the experiments of Lieut.-Col. Yorke, yet his and other experiments all seem to tend to the conclusion that, wherever it is practicable, iron or earthenware pipes (the latter glazed by common salt) ought to be used, even though the water contains a considerable quantity of salts, and more especially if these salts are perchlorides or persulphates.

I purpose to return to the subject of the action of steam and hot distilled water upon lead, and shall, if you will permit me, have much pleasure in stating the results in your Journal.—W. BIRKMYRE: *Dec.* 21.

DR. RYAN'S LECTURES ON AGRICULTURAL CHEMISTRY.

SIR,—Intelligent farmers duly appreciate all practical hints towards the improvement of their property, and only show prejudice when they hear lectures somewhat contrary to their experience. They know the value of analysing the soils, and the preparation of manure suitable to the nourishment of the different plants; but they do not admit of leaves feeding the plants downwards, nor the possibility of giving instructions to the farmer, from the examination of mere samples of different soils.

It is well known that the roots not only absorb fluids from the soil, but they return a portion of their peculiar secretions back again into it. This is a general property of the vegetable kingdom; and as this indigestable food of the plant accumulates about the roots, the soil is so deteriorated, if one species is allowed to grow too long in it, that it will not support another—this fact led to the necessity of the rotation of crops, to ensure economy in the use of good soil.

Many experiments have been made to prove that leaves only exhale the superfluous gases, and do not respirate as animals do. The animal is necessarily provided with the digestive organs in the seat of the stomach, and therefore must respirate, absorb oxygen and exhale carbonic acid gas; but in the plants these functions are performed at the two extremities—*i. e.*, fed and excrete at the roots, and the gases evolve from the leaves.

Some plants will grow in an atmosphere of hydrogen, whilst the roots are supplied with oxygen and carbon; but no plant will exist in carbonic acid gas. Cut off the roots, the plant dies—cut off the leaves (which I have done frequently), the plant still lives, and new branches and leaves will be developed from the trunk. Other kind of experiments may be noted, by which barren trees have been made to bear fruits—these could only be done by following the natural laws of the physiology of vegetation. If the perspiration of the plants is checked by atmospheric causes, injuring the fine hairs and pores of the leaves, and rendering them incapable of performing their functions, the quality of the plant is damaged, however good the soil may be, the solid parts become more watery, owing to the roots abstracting from the soil at a greater rate than leaves are capable of exhaling the gases.

Having studied the phenomena on the *large scale* for many years in the wilds of Nature, and still cultivating a small spot of ground for amusement, I, as one who is anxious to receive instructions, will always appreciate all good practical lectures founded on experience. I recommend the *cause* and the *remedy*, as connected with the epidemic amongst the potatoes, as a fine field of inquiry for Dr. Ryan and other agricultural chemists, success in which will be amply rewarded.—J. L.: *Bathwick, Dec.* 19.

DR. RYAN'S LECTURES.

SIR,—It appears that farmers are something like miners, according to Dr. Ryan—very jealous of their practical knowledge, and are prejudiced against doctrines expounded by those whom they think have not the opportunities of testing their accuracy.

Having a large family to support, I have taken to a little farming to assist my mining avocations—so that my occupation is divided between the extraction of minerals from the bowels of the rocks, and the extraction of food from the surface. I find my mining rules peculiarly applicable to the surface—viz.: the health and quality of the plant depending on the nature of the soil, and not on the atmosphere, provided the latter be not contaminated with any substance, or gases, which may injure the leaves. The food of the plant is received from the soil by the roots, and the surplus gases evaporated into the air. Should the atmosphere become foul and charged with carbonic acid gas, the plants will then droop, until the air is refreshed by a shower of rain. I have been working hard to get as much carbonaceous matter into my soil as I thought it required, when, lo and behold! we are now told that two-thirds of the substance of our crops are obtained from the atmosphere, and, therefore, completely out of our control. If Dr. Ryan can prove to us, in any shape or form whatever, that plants take their carbon from the atmosphere by means of their leaves, and not solely by the roots, then, and not till then, shall we consider such doctrines tenable, and he will have himself to blame if they are not attended to. It has been proved, by several experiments in England, and also in hot countries, that an atmosphere containing from 2 per cent. and upwards of carbonic acid gas kills all plants; and this appears to be as injurious to the flowerless as to the flowering plants. In roving through the forests of tropical America, we find the earth overladen with vegetation, thick and gigantic, and almost impenetrable—nothing impedes their development. The immense layers of mould and rich carbonaceous soil evince the cause of the uninterrupted action of the vegetable organic powers.

In those regions man, and other animals, are not essential to the order of Nature: vegetation will flourish in the absence of animals. The balance supposed to exist between the animal and vegetable world, by adding and subtracting the carbonic acid gas in the atmosphere—that is, from the mouth of the animal to the leaves of the plants—cannot be supported.

We look to variable temperatures, winds, and rain, to keep the air in a healthy state for animals and vegetation. According to my humble opinion of the matter, the plants obtain their food solely from the soil, and that a homogeneous compound of the decomposed elements below, such as silica, potash, soda, lime, oxide of iron, carbonic and other gases, is required in good farming, and that the uniform mixture of the soil must be kept up by manure and the rotation of crops. These points, together with the subsoil drainage, constitute what I call the chemical science of agriculture. We are rough diamonds, and as hard and as stubborn as matter-of-fact things generally are. We are willing to be polished and instructed, provided the practical knowledge we have obtained by the experience of our forefathers is not controverted; but if enveloped in an atmosphere of assumption, we cannot swallow it in any shape or form whatever.—A MINING CAPTAIN: *St. Day, Gwennap, Dec.* 20.

COMBINATION OF IRON AND CARBON.

SIR,—The correspondence of your able contributors, Messrs. Mitchell and Mushet, is not a little interesting, and must eventually elicit useful facts. The expression, "gaseous carbon," is at least *novel*, but I am not so sure of its scientific propriety. We are accustomed in chemistry to distinguish between gases and vapours, and the existence of "gaseous" carbon, or carbon in the state of vapour, in *solid steel*, is as inconceivable and incomprehensible as gaseous carbonic acid in solid limestone, where it unquestionably exists in a *solidified* form. Like "inaudible explosions," an expression used by a distinguished philosopher, which I regard as a poetical flourish, so I esteem that of "gaseous carbon" in solid steel. I confess I have been disposed to consider the diversities of steel as sometimes, at least, dependent on accidental admixtures of extraneous matter, and not carbon merely, as, for instance, the basis of some of the earths, especially *silicon*, or the non-metallic base of silica. I am, however, by no means disposed to coincide with Dr. Brown's peculiar views (the *identity* of carbon and silicon) in preferring this opinion, being led to the conclusion from some experiments of my own, in reference to the researches of Boussingault and others.

Towards the close of Mr. Mushet's late communication, he incidentally refers to the singular change which cast-iron undergoes by long-continued contact with sea water. One of the discs of iron employed as a protector to the copper sheathing of ships in the earliest experiments of Sir H. Davy, and now in my possession, can in nowise externally, or physically, be distinguished from "plumbago." It is extremely light, may be cut like "black-lead," and be employed to write on paper, in all respects like a common black-lead pencil. It sometimes contains cavities, filled with an oily-looking material; I have not analysed the substance.

Portland-place, Hull, Dec. 19. J. MURRAY.

CARBON AND IRON.

SIR,—Since graphite is nothing but pure carbon, I conceive that it would be well to adopt one of these names, and to disuse the other, and also to confer some suitable appellation upon the keesh of the blast-furnace, or assay crucible, which is *not* pure carbon, but which enters largely into the composition of various kinds of cast-iron. Of course, there can be no great difficulty in giving a correct analysis of pure carbon; but no one has yet succeeded in analysing keesh, or if any one have accomplished this difficult task, the details are as yet unpublished, as far as I know. My arguments are yet unanswered, which I have adduced in support of my late father's opinions, respecting the quantities of carbon in iron and steel; and pending the *denounement* of Mr. Mitchell's experiments, I revert to the opinions I have previously maintained respecting the formation and constitution of the ordinary pig-iron of the blast-furnace—opinions which, if adopted, will explain readily every enigma respecting the various proportions of carbon contained in different kinds of pig-iron, and why, with the same amount of carbon, the cast-iron may sometimes be white and sometimes grey. It may be assumed, as an axiom, that iron, in whatever condition it may exist, cannot, in a state of fusion, imbibe a particle of carbon, gaseous or concrete; therefore, in whatever condition it may be found when it reaches the zone of fusion in the blast-furnace, it will also be found in that condition as a constituent either of the cinder or iron tapped from that furnace. The peroxides and protoxides pass into the cinder, and the pure iron, malleable iron, steel, white cast-iron, and grey cast-iron, unite in *alloy* to form the pig or common cast-iron; and as the proportions of each kind or condition of iron vary *inter sese*, so will the resulting pig-iron exhibit a corresponding alteration in its appearance and texture. Experiments upon the small scale fully confirm this view of the matter—thus, if equal quantities of sharp grey-iron and steel-grained iron are melted in separate crucibles, and the liquid contents are mixed in one of the crucibles, the result is a button of mottled iron generally, and sometimes of white iron. Again, when brittle No. 1 Gartsherry cast-iron is melted in one crucible, and poured into another crucible, containing an equal quantity of melted bar-iron, the resulting button displays the characteristics of bright grey pig-iron, and the alloy possesses immense strength. If poured into a mould, the ingot will undergo a considerable degree of flexure before breaking.

The phenomena of cementation furnish, likewise, a strong confirmation of what I have advanced. When oxide of iron is cemented in contact with carbon, it will, if a peroxide, readily lose as much oxygen as will bring it into the state of protoxide—a fact easily demonstrated by the loss sustained by the oxide. Now, if the heat be not raised above a certain degree, no further loss will be observed to take place, and to remove the remaining oxygen, a higher temperature must be urged. Under this augmented temperature, the whole of the oxygen may by degrees be removed, and the iron is left in a state of purity. A continuation of the exposure to the same degree of heat, requisite to deoxidise the ore, will not, however, suffice to carbonise the particles of iron. The temperature must be again raised, until it is about that degree requisite for the fusion of ordinary cast-iron. Under this exposure, the iron will gradually pass from pure iron to malleable iron; from malleable iron into steel, analogous to the steel of cementation, or blistered steel; from steel to steel-grained cast-iron; and from steel-grained iron to white iron and grey iron; after which, as the fusibility of the iron has increased, whilst the temperature was nearly uniform, the iron undergoes actual fusion, and no more carbon can be taken up by it.

Now, in the blast-furnace the materials come down to the zone of fusion in all the various stages of deoxidisement and cementation, or carbonisation; and as the heat in that region is certainly higher than the melting point of malleable iron, each variety of cemented iron is at once fused as it arrives at this zone, and adds its product of fused pure iron, malleable iron, steel, steel-grained iron, white or grey cast-iron, as the case may be, to the fluid mass in the hearth; and the general characteristics of the pig-iron run from this mass will manifestly be determined by the relative proportions of the alloy. In a small blast-furnace, working upon calcareous ores, and overburdened and overblown purposely, using also light combustible cokes, the pig-iron produced was steel-grained, and often approaching so near to cast-steel, that it would cut and file readily; whilst its strength was so great, that it was a joke amongst the workmen to set strange workmen to the task of attempting in vain to break one of the pigs. In this case, from the small size and rapid driving of the furnace, few, if any, of the materials were carbonised beyond the state of steel-grained iron; and large quantities entered into fusion as steel and malleable iron, conferring upon the pig-iron the characteristics of an alloy of these materials. The explanation, then, of the enigma, "Why, with equal proportions of charcoal, or carbon, cast-iron is sometimes white and sometimes grey?" is simply this:—That grey cast-iron, when alloyed with pure iron, malleable iron, steel, and white iron, becomes less and less grey, in proportion to the quantity of alloy added to it—that the quantity of the alloy will depend wholly upon the cementing power of the blast-furnace, modified by the attendant circumstances of management and burdening—that when none of the materials are, on reaching the zone of fusion, sufficiently carbonised to yield grey iron, the iron will be white, and will contain a certain per centage of carbon—say, for example, 3 per cent.; and, lastly, that when a portion of the materials are carbonised so as to produce rich grey iron, still a larger portion may be only simply deoxidised, or steelified; and, adding their alloy to the rich grey iron, a sharp or bright grey pig-iron will result, which may contain, likewise, only three per cent. of carbon as the mean average per centage of its constituent alloys. Upon the crucible scale, when small quantities of materials are operated upon, the mass undergoes, in all its parts, a degree of cementation nearly uniform; and when the heat is raised for fusion, the iron is all nearly in the same condition—viz.: either pure, malleable, steely, or cast-iron, white or grey; so that the cast-irons of the crucible are in a more perfect state than those of the blast-furnace, and are not to be considered as alloys—hence the unerring certainty with which, from any given ore, we obtain in the crucible a maximum produce when the iron is grey, and a minimum when it is in the malleable state. Yet, when an assay is hastily per-

formed, before the cementation has pervaded the mass, and a high temperature is prematurely brought on, iron, in different stages of deoxidation and carbonisation, is made to undergo fusion, and an alloy is formed. In this manner, it is easy to obtain very perfectly mottled iron from an assay.

I recently obtained some of the Siegen white cast-iron, examined by Karsten. One thousand grains of this iron, slowly heated and fused with charcoal, afforded me a rich button of grey iron, weighing 1014 grains—so that it had gained 1·4 per cent. of carbon. I shall have the pleasure of forwarding to Mr. Mitchell a portion of this white cast-iron, and the resulting grey iron. Whenever it shall be established as a fact that white cast-iron contains more carbon than grey, it will follow, as a necessary conclusion, that, of all white cast-irons, refined metal contains the most carbon; steel, more than white cast-iron; and bar-iron, more carbon than steel. When a foundry air-furnace is charged with high-blown metal, the latter will pass rapidly into the state of malleable iron without melting. Grey cast-iron would require one, two, three, or even four meltings, according to its quality, to bring it down to white iron, to say nothing of the state of refined metals. There are two very distinct varieties of white cast-iron produced from the blast-furnace—the one kind, when the furnace gives white iron with a grey cinder; the other, when it yields white iron with a black or scouring cinder. The analyses of these varieties will lead to very different results.—ROBERT MUSHET: *Coleford, Dec.* 18.

WEARDALE.

SIR,—The "ryder" mentioned by your correspondent is neither more nor less than the sparry carbonate of iron, or spathose ore of Siegen. The valley of the Wear from Stanhope upwards is, in fact, one vast depository of this ore, in every state of purity and impurity. The quantity of ore in the valley, and its surrounding hills, I roughly compute at 400,000,000 of tons, averaging, perhaps, about 30 to 34 per cent yield in iron. Five years ago, I believe this deposit was unknown, except as "ryder," though the valley had been explored and described by some of the leading geologists of the present day. Yet this "ryder" is the matrix of the lead ore of Weardale, and has been worked and rejected as rubbish for centuries. Roads were mended, and walls built of it, and the spoil heaps of Rookhope, Middlehope, &c., attest the wisdom of the leadowners. The carbonate of iron is found associated with the sulphurets of lead and zinc, and to the former must be attributed any defect in the iron. I have, however, seen a specimen of pig-iron from Stanhope furnace quite as strong as the best anthracite iron; and, indeed, such is the extent and purity of the deposit, that it is possible to supply any number of furnaces with spathose ore of 46 per cent., and, therefore, nearly pure.

The idea of any ironmaster being unable, as stated by your correspondent, to obtain iron from this ore is preposterous, for the only fault possessed by the ore is its too great fusibility—a point, perhaps, which has been overlooked, and which, unless corrected, must, of course, lead to the rapid wearing and destruction of the hearths and linings of the furnaces wherein it is smelted. From the proximity, excellence, and cheapness of the ores and coal in this district, Weardale is, perhaps, the finest situation for iron-works at present known, and its resources are inexhaustible.

Dec. 19. A MINER.

"RYDER"—THE DERWENT WORKS.

SIR,—I observe, in the last Number of your Journal, a letter signed H. T. Arniston, C.E., which, in alluding to the kind of iron ore abounding in the lead mines near this place, and termed "ryder," contains the erroneous statement, that the "Derwent Iron Company has given up using it, being unable to extract the iron." I beg to put you right on that matter. We gave a fair trial to this "ryder," having consumed 7000 tons of it with that object. We discontinued it, not from any difficulty in extracting the iron. On the contrary, the iron is more easily extracted from it than from any ore we are acquainted with. Our reason for not using it was the extremely bad quality of the iron made from it, which could never be worked into bars of good quality, however treated; and we had no motive for using it, as we have on the site of our works ironstone of a superior quality in illimitable quantities, which the slightest admixture of this "ryder" greatly deteriorated, and rendered the production of bars much more expensive, as well as of inferior quality.

Another mistake your correspondent has fallen into may as well be set right. He understands that a "Mr. Sturge was the originator of the Derwent and Weardale Works." These (the Derwent) works were begun and established in 1842, under the superintendence of my brother and other partners, and since 1843, up to the present time, have been completed, and carried on under the superintendence of myself. Neither of us ever had in our employment, or, indeed, ever knew of the existence of, any gentleman of the name of Mr. Sturge until the present moment, from seeing it mentioned in Mr. Arniston's letter above alluded to, so that there is some mistake or other in the matter. WILLIAM CARGILL.

Consett Iron-Works, Shotley Bridge, Dec. 17.

DESCRIPTION OF THE LUNAR LAMP.

SIR,—To praise oneself is mean; but to relate one's discoveries, or publish one's inventions, for the benefit of others, is honourable. I hope, then, I may not be charged with meanness for making known my invention upon the present occasion, because such invention is designed for the benefit of a very numerous class of my countrymen, and the description herein given is intended to make their employers acquainted with the same. I desire my inventions to be based on their own merits, and not on mere praises of mine. But to enable parties to form an opinion of their utility, they must first be made acquainted with their principles and nature; and this I will now endeavour to do, through your kindness, Sir, in permitting me the use of your columns.

The lamp, which I have entitled the "lunar lamp," is a safety mining lamp, of new and novel construction. It is an oil lamp, and agrees with the safety-lanthorn in two particulars—viz.: that it is of square or quadrangular form, and that it is fitted with a padlock, so as to be locked, to prevent access to the interior when in use. The back is made of tin, and the three sides of wire gauze, or, which I recommend, of thick plate glass. I consider plate glass equally as strong as wire gauze, and preferable, because it intercepts no light. The top of this lamp does not open, as in my lanthorn; the back opens instead, and forms a door, through which the oil vessel is put in. The top is what is termed a "crinkle top," on the outside of which a ring is fixed, to hang the lamp up by. Underneath this top, and inside the lamp, a piece of wire gauze is soldered, to keep the flame from contact with the gas outside. Air, to supply the flame, enters through strips of wire gauze, soldered round the bottom of the lamp. The door must be made to fit closely, and every part of the lamp should be substantial and accurately fitted. The door is fastened by a hasp and staple, through which the bow of a small padlock is inserted. A jointed handle is fixed upon the outside of the door, by which the lamp is carried when the ring at top is very hot. The height of the lamp I have had made is 9 in., the width 4 in. It is light and handy, its cost is little, and it will last a long time. In this lamp the tin coversides, or flaps, are dispensed with, because, as will now be explained, there is no danger of a slight draught of air flickering the flame.

The oil vessel and burner are, however, the most original and novel parts of this lamp. All the smoke is consumed in the lamp; the lamp will, therefore, seldom want cleaning. By means of a deflector and chimney, the draught and heat are so much increased, as to cause all the products of combustion to be consumed, and, consequently, no smoke is seen. This arrangement produces a brilliant flame, which will remain unaltered for six hours, and will keep in and give a good light for nine hours without any trimming. The oil vessel is of a square pyramidical form, and slides in two dovetail grooves at the bottom of the lamp. The burner is a simple two-tube one for common cotton; there is no more trouble in lighting this lamp than in lighting a common oil lamp. After the wicks are lighted the deflector is screwed on, and the chimney fitted in, care, of course, being taken not to set the flame too high, else it will cause smoke. The oil vessel is now slided in the lamp, and the door is then closed and locked; every part is simple and compact. The commonest oil may be used; the cost of burning is about half a farthing per hour. Since the flame is enclosed by the chimney, no side covers are necessary to break the draught. The above short description will give a general idea of the construction of the lunar lamp. The statements therein contained have not been made at random, but have been deduced from actually using the lamp. I truly believe that it possesses those two necessary qualifications—viz.: safety and light-giving power—therefore I can confidently recommend it to the notice of the proprietors and managers of collieries. It is possible, by discontinuing the use of naked lights, and by using exclusively safety-lights in all pits, to prevent explosions of fire-damp.

Birmingham, Dec. 16. JOHN CRANE.

THE TIN TRADE—SALES OF PRODUCE OF MALAY STRAITS.

SIR,—I have been looking into the *Mining Journal* for sales from Cornish mines; and, as most descriptions of mining property at present meet with a low price for its produce, I presume it may be, in a great measure, attributable to the excess of quantity being brought from foreign mines, in addition to the Cornwall and Devon mines' production. Much has been written against the "smelters" in your paper—the very little I know of them, and more that I have heard from people who are intimately acquainted with their method of business, induces me to think that they are a most honourable and worthy class of gentlemen. It is the tin sales from Malay Straits, and such other parts, the property of the Dutch Government, that I would prefer seeing placed upon a different method of disposal. For instance, I understand that once a year about 200,000*l.* worth of metallic tin, in slabs, is sold at Rotterdam, or Amsterdam; and, if my informant be correct, the Cornish and Devon mines' sales, in oxide of tin, amounts to nearly 500,000*l.* per annum. When it is considered that nearly equal to half the production of tin mines in Cornwall is offered at one day's sale in Holland, it is not to be wondered at the "Cornish tin smelters" making a little preparation previously for such an immense amount of sale. I hear that the price of tin is good at present—produced, probably, from good demand; and it may happen, when the next annual Dutch sale takes place, there will be a flatness in the tin market, and corresponding dullness in business generally. Under all the circumstances, I should like to see the Dutch Government hold periodical sales (say monthly), when it is only fair to presume it would find a less uncertain market, with a chance of better prices, than in one large sale, especially in days of European mercantile distress and want of confidence. If such were the case, the Cornwall and Devon tin mines would not have the immense cloud hanging over them once in the year; its dimensions, as described by some, sufficient to deluge all the tin mines in Cornwall that are not situated on high places, except as I have been informed, much ingenuity were displayed in placing the "stream" in a *certain* position.

City, Dec. 18. AN OBSERVER.

HYDRAULIC PRESSURE ENGINES.

SIR,—In your last Number, I observe a letter dated "Bakewell," containing some remarks on the engines employed in draining the water from the Alport Mines, of which I am a shareholder. As it may be of some interest to your mining readers to know a little more of the means by which a quantity of water, quite unparalleled, I believe, in mining operations, is lifted from these mines, at a very moderate cost, I will trespass shortly on your space, while I briefly detail the mode of draining. It was first accomplished by an adit level of three miles in length, large enough to allow a boat to pass along, for the purpose of bringing out the materials excavated in driving the level, and for future repairs. From this level various branches are driven along the principal veins; and the mines having been exhausted to a considerable extent to this depth, a hydraulic pressure engine was erected by Mr. Trevithick in 1803, for the purpose of draining deeper a portion of the mines left rich in the bottoms. This engine lifted two pumps, each of 33 inches in diameter, to the depth of 8 fms. only, and worked at a maximum speed of five strokes per minute. In the year 1836, an engine was erected by Mr. Fairbairn, of Manchester, on another portion of the mines, which lifted the water to the same depth as Trevithick's engine—viz.: 8 fms. below the adit. The drawings for this engine were originally furnished by Mr. Robert Stephenson, but were, in some degree, modified by Mr. Fairbairn. This engine works at a maximum speed of seven strokes per minute, lifting a pump of 38 inches in diameter. In the year 1839, a consolidation of the various interests in these mines took place, and the management of them was placed in the hands of Mr. Taylor, of London, who engaged the services of Mr. Darlington, engineer to the East Crinnis and Charlestown Mines, in Cornwall. It was from the drawings furnished by Mr. Darlington, that the large engine made at the Butterley Works was executed under the superintendence of Mr. Glyn, and it has answered the object aimed at extremely well. It lifts a pump of 42 inches in diameter to the depth of 21 fms., the maximum speed being five strokes per minute. It is of this large engine that the beautiful model made by Mr. Jordan is to be seen in the Museum of Economic Geology, at Craig's court, Charing-cross.

In consequence of the successful application of this engine, the late Mr. George Stephenson was requested by the proprietors of the Talargoch Mine, in Flintshire, to inspect the Alport engine, and report upon it. On his recommendation, an engine of the same size was constructed at the Rhyd-y-Mwyn Foundry, near Mold, from the drawings furnished by Mr. Darlington, and has now been at work for some years at the Talargoch Mine, and has, I believe, given great satisfaction. A smaller engine of similar principle, but somewhat different construction, has recently been made for the Frongoch Mine, in Cardiganshire; but I believe it is not yet put to work. The drawings for this engine were furnished by Mr. Darlington. He has also recently erected two engines similar to the above, but much larger in size, at the Alport Mines—the one lifting a pump of 28 in. diameter to the depth of 21 fms., and the other intended to lift a 40-in. pump to the depth of 12 fms. These engines work at a maximum speed of about seven strokes per minute. Thus, then, are five large hydraulic engines working at these mines, lifting from 7000 to 8000 gallons of water per minute, by the means of pumps of 10-ft. stroke, varying in diameter from 27 in. to 42 in. The drainage of the mines is, in this manner, accomplished at a cost of about 30*l.* per month, enabling a large number of miners, and their families depending on them, to be maintained; and an indirect benefit is obtained by their employment to the neighbourhood in which they reside, and a considerable sum is paid in the shape of royalty to the Duke of Rutland, who is the lord of the manor and owner of the soil. The low price of lead at the present time does not allow the proprietors to make any dividend in the shape of profit; but the small cost of lifting the water, enables them to work an ancient and extensive group of mines, which would otherwise be prematurely closed, to the great detriment of this neighbourhood. If any of your readers require further information respecting these engines, they may obtain it by personal inspection. Mr. Darlington, who is the agent, as well as engineer of the mines, will give every facility for inspecting them, or the drawings from which they are constructed. A PROPRIETOR OF THE ALPORT MINES.

Alport, Dec. 14.

RAILWAY ALARUM.

SIR,—My attention has been roused to the necessity of a railway alarum, in consequence of a recent serious collision in reference to the mail train.

I would apply the same principle for sounding the alarum between all the stations on a line of railway, as I have already recommended, in reference to the individual carriages composing the train. It is merely necessary to have an air-tight tube, or pipe, extending continuously from station to station—at one terminus is an air condensor, or forcing pump, and at the other end a "railway whistle;" a second pipe, parallel with it, with the reverse arrangement, would reciprocate the signal of alarm in return.

Even *steam* proceeding from a small boiler, as a substitute for the condensor, might be made available to sound the whistle; but, as in this case, the transit tube must be kept constantly heated. I would have a compound pipe, or one with a septum—that is, a divided pipe. Only one of these to be connected with the steam whistle, to be made available by a *stop cock* when required—the steam constantly flowing through the one division would sustain the other at an adequate temperature, and the movement of the stop-cock would at once connect the steam with the whistle, and close its former channel of escape. J. MURRAY.

Portland-place, Hull, Dec. 21.

BUTTER.

SIR,—The *New York Mirror* announces as a wonderful discovery the *instantaneous formation* of *butter* by forcing air through cream. You will remember my recommendation of the application of the air-pump for this very purpose, some time ago, on the principle of atmospheric air passing through the porous structure of wood, its lower end being immersed in water, while its upper surface is exposed above the orifice of the exhausted receiver.—J. MURRAY: *Portland-place, Hull, Dec.* 21.

IMPROVEMENTS IN THE CONSTRUCTION OF OVENS.

RESPECTED FRIEND,—Permit me to suggest what I consider to be an improvement on the somewhat antediluvian mode now adopted in constructing ovens for baking bread. Iron has been tried, but has not answered; but a worse material could not be found than bricks; for being porous, they absorb the moisture of the bread, causing it to dry in a few days, besides leaving a thick brittle crust. A patent was obtained, I believe, in Germany, some years since, for constructing ovens with stone; but it does not appear that the plan has been adopted in this country. In some parts of the continent ovens are constructed entirely of granite, and, of course, a great deal of fuel is required to heat them; but then they retain the heat a long time in proportion. Bread, baked in these ovens, will keep fresh as many weeks as it will days when baked in brick ovens, and the crust is so thin and moist, that it can be cut with a penknife. Still I believe it possible to construct ovens with either wrought or cast-iron, which would be more convenient, as the fire could be placed under it; all that would be required to prevent the bread from being injured by the heat, would be to pave the floor of the oven with a thin layer of hard stone, on which the bread would be placed; the heat would have to pass through the iron and stone, so that it could never pass too rapidly. The oven should be surrounded by an arch of brick, leaving a space of 6 in. between the iron and the arch, in order to allow the flames to extend over it before reaching the flue, so that little or no heat would be lost.

Liverpool, Dec. 12. JOHN DE LA HAYE.

VENTILATION OF COAL MINES.

TO THE EDITOR OF THE GATESHEAD OBSERVER.

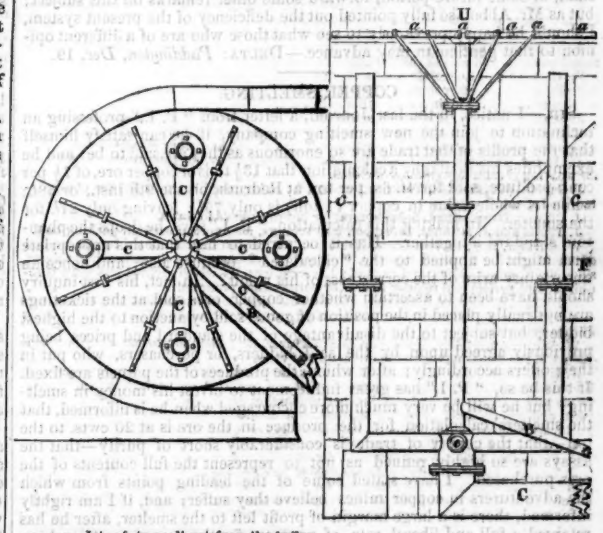
SIR,—It will be in the recollection of many, that Mr. Gurney, the discoverer of the Bude Light, suggested to the Parliamentary Committee, which, in 1835, examined into the causes of accidents in coal mines, the application of high-pressure steam for procuring an increased force of ventilation; and again, in 1839, when the South Shields Committee, appointed to investigate the causes of accidents, were making their examinations, he more fully detailed the power, safety, cheapness, and facility of its application. Since that time it does not appear to have been at all noticed by scientific men. About the middle of this year, whilst in London, I attended a lecture (at the Polytechnic Institution in Regent-street, on a "Jet of Steam") in which the lecturer proved, by the experiments he made, the benefits to be derived in ventilation from high-pressure steam. So convinced was I of its utility, that I determined to make the experiment at Seaton Delaval Colliery; and the plan has now been in operation one month, and has far exceeded my expectations.

There are four downcast shafts, each 8 ft. diameter; and after making allowance for the cage-guides, buntons, &c., the area is 150 superficial feet. The upcasts are two, one of them 9 ft. diameter, and the other 8 ft., giving an area of 113·8 superficial feet. The quantity of air circulating through the mine, previous to Gurney's steam apparatus being erected, was 53,058 cubic feet per minute; and since it was set to work the quantity has been 79,359 cubic feet per minute, which is an increase of nearly 50 per cent. The apparatus at present is only applied at one of the upcast shafts; and I am pretty confident if another were erected at the other upcast, a corresponding increase would be the result. A short time, however, will prove this, as one is in course of erection.

To myself this experiment affords the greatest gratification; as, before the apparatus was erected, carburetted hydrogen gas was occasionally seen at the edge of the goaves; but, since, it has entirely disappeared; and I entertain sanguine hopes it will not be met with at those points again.

I may be allowed to remark, that the extreme distance of the workings in Delaval Colliery from the shafts, in three districts, exceeds 1½ mile; and there is no difficulty, with the present means, of obtaining a brisk circulation of air. In working the whole coal naked lights are used with perfect safety; but in working the pillars, or what is termed the "broken mine," the Davy lamps are invariably used as a necessary precaution. I have forwarded you a drawing of the high-pressure steam apparatus, as applied at Delaval, with the necessary references; and I have only further to add, that I claim no credit to myself, except in making the first trial; for it is Mr. Gurney's invention, and to him alone is due the credit; and I should not have troubled you to insert these few remarks, but with the hope that they may be the means of inducing other parties, interested in this and other districts, to adopt this most useful and cheap mode of ventilating coal mines.—T. E. FORSTER: *Newcastle-on-Tyne, December* 11.

HIGH-PRESSURE STEAM APPARATUS.



a, a, a—Jets of steam direct from the boiler.
B—Pipe from the boiler.
C—Exhausting pipe from the engine, branching into four others, *c, c, c, c.*
F—Furnace drift. U—Upcast shaft.

[The situation of the pits from each other are exceedingly regular; two pairs of working pits, with that containing the steam apparatus, and the furnace pit forming, as it were, another pair, run nearly north and south; the latter being south-while at nearly a mile distance to the south-west, are the furnace and engine pit, forming the extent of the workings in that direction.]

GEOLOGY OF THE NEIGHBOURHOOD OF LIVERPOOL.

TO THE EDITOR OF THE LIVERPOOL STANDARD.

SIR,—I have read Mr. Dunn's communication [published in the *Mining Journal* of the 9th inst.] with very great pleasure, and I hope his problem will be thoroughly discussed in your columns on sound practical grounds. Mr. Dunn is personally unknown to me; but, judging from his occasional communications to the *Mining Journal*, his opinions demand every consideration and respect. I have long entertained an opinion, that the plain between Bidston and Kirby is a coal-field, independent of the Dee field; and I did commence an examination of the district, with a view to satisfy myself, as far as possible; but my design was frustrated by engagements requiring me elsewhere. I fear I have lost the notes and sketches I made; but, if I can find them, I will give them to any respectable competent person who may be inclined to make use of them. A bore, I have been informed, was made in some part of the district; but the party who made it, for reasons which can, I believe, be satisfactorily explained, abandoned operations. Perhaps some of your readers know the party, and may be able to induce him to make known any particular facts he may be in possession of.

I have a doubt in my mind whether the red stone, on the Liverpool side of the Mersey, is not of that thickness that coal seams lying under it would be so much compressed as not to be worth working. I would, therefore, suggest that an endeavour to obtain an approximate estimate of the thickness should be made, before a boring is determined. Mr. John Formby, I believe, made a bore in the red stone, in the vicinity of Aintree, and he is a gentleman very likely to have kept a good record of his proceedings.

Is not Mr. Dunn in error as to the coming in of the throws at Torbock and Ness? He says they come in south and north. I should have expected the seams to have been cut by the red stone coming from the west in one place, and from the east in the other, or nearly so; indeed, I do not see that the principle of his diagram can be correct on other conditions.

Your local geologists have now a very excellent opportunity to display their talents on a really practical point of geology, and, consequently, to lay the community under great obligation to them.

Mr. Dunn, as well as Mr. Gladstone, deserve especial thanks for the trouble they have taken; but certainly priority of publication gives the merit of the suggestion to Mr. Dunn. As the matter has been discussed so far under real names, I do not think it right to address you anonymously.—B. DONBAVAND: *Glanadda, Dec.* 15.

P.S.—It occurs to me to ask if a pit has not been sunk with success recently, some distance east of the Old Ness Collieries?

NATIONAL PROVINCIAL BANK OF ENGLAND,

112, Bishopsgate-street, London, Dec. 19, 1848.—The directors of the National Provincial Bank of England hereby give Notice, that a HALF-YEARLY DIVIDEND, at the rate of 6 per cent. per annum, will be PAYABLE on the company's stock on and after the 19th January next, when the dividend warrants will be obtained at the company's office, 112, Bishopsgate-street, or at the different branches.—The transfer books will be closed on and after Wednesday next, the 27th inst., until the dividend becomes payable.

By order of the court of directors, DAN. ROBERTSON, Manager.

NORTH BRITISH AUSTRALASIAN COMPANY.—The

ANNUAL GENERAL MEETING of the shareholders is to be HELD in the Aberdeen Hotel upon Thursday, the 28th inst., at One o'clock, for the purpose of electing seven directors for the ensuing year, and other business.

Aberdeen, Gallowgate, Dec. 8, 1848. (Signed) JOPP & SHAND.

The reports of the committee of shareholders, and of the directors, may be seen at the cashiers' offices for 14 days previous to the meeting.

A PRELIMINARY MEETING of the partners, to consider the state of affairs, will be HELD in the Lemon Tree Tavern, on Wednesday, the 27th inst., at Six o'clock P.M.—The English shareholders are particularly requested to send a deputation to the meeting, or address communications, or their proxies, to Mr. James Anderson, at the Lemon Tree Tavern, Aberdeen, as acting for himself and other shareholders.

An ADDRESS to the shareholders appears in another column of this day's Journal.

CAMERON'S COALBROOK STEAM COAL & SWANSEA

AND LOUGHOR RAILWAY COMPANY.

[*Registered and Incorporated.*]

The board of directors having observed in an advertisement in last week's *Mining Journal*, signed "H. Hart, Chairman," a statement of certain proceedings having taken place at a meeting therein referred to, Notice is hereby given, that such alleged PROCEEDINGS are wholly INOPERATIVE, VOID, and ILLEGAL.

By order of the board of directors,

N. P. CAMERON, Chairman.
A. C. HOWDEN, Secretary.

Company's Offices, 2, Moorgate-street, Dec. 16, 1848.

CANNEL OR JET COALS—34s. per ton delivered—The

nobility, gentry, and the public, are informed that a further SUPPLY of these COALS is at hand; and, to prevent any disappointment, ORDERS should be IMMEDIATELY FORWARDED to the AGENTS, as under:—For the city and east end, Thos. Meeson and Sons, 46, Fenchurch-street, and Stratford, Essex—for Southwark, &c., N. Pegg, Phœnix Wharf, Bankside, and Thomas and Neale Horne, Holland-street, Blackfriars—for Islington and north end, Edward Green, City-road Wharf, City-road—for Westminster, Batters and Morton, Millbank—for Pimlico, Fred. W. Heimore and Chas. Smith, 151 B, Piccadilly, and St. George's Wharf, Pimlico—for Chelsea, Battcock and Co., Chelsea Wharf, Cheyne-walk—for Bermondsey, D. F. Hollands and Son, Sunderland Wharf, Bermondsey Wall—for Greenwich, &c., Alfred Ritchie, Deptford-bridge.

Colliery Office, 46, Fenchurch-street.

EMIGRATION.—IN THE STATE OF GEORGIA,

UNITED STATES OF AMERICA.

FOR SALE, 120,000 ACRES of FREEHOLD LANDS, in IRWIN COUNTY; in lots of 490 Acres, at 6s. per acre; and in lots of 25 Acres and upwards, at 8s. per acre. The lands lie between 31° and 32° north; distant from the Atlantic Ocean 120 miles, and at an elevation of 400 feet above its level; free from swamps, climate salubrious and healthy, distant from England 18 or 20 days' sail. They are bounded by the navigable rivers the Flint and the Ocmulgee; by the former, a communication is opened to the Gulf of Mexico; by the latter, to the Atlantic. A RAILROAD, two-thirds finished, passes through the lands, which will connect both these rivers.

The purchasers of the several lots will be entitled to the minerals or products which may be found on the property, thus considerably enhancing the value.—Vessels sail nearly every week from Liverpool to Savanna or Charleston. Passage to either city from £3 to £4 per head; passengers finding their own provisions, &c.—From Charleston and Savanna, the lands are reached by either coach, waggon, or steam-boat.

Every information may be obtained relative to the above, &c., from RICHARD KEILY, Esq., 1, Royal Exchange Buildings, London.

NEW PATENTS.

J. Eccles, Moorgate, Fold Mill, near Blackburn, Lancaster, cotton spinner, and James Bradshaw and W. Bradshaw, of the same place, watchmakers, for certain improvements in, and applicable to looms, for weaving various descriptions of plain and ornamental textile fabrics.

W. Wharton, superintendent of the carriage department of the London and North-Western Railway Station, Euston-square, for certain improvements in the construction of vehicles used on railways, or on other roads and ways.

H. Walker, Gresham-street, London, needle manufacturer, for certain improvements in the process or processes of manufacturing needles.

W. Wild, Salford, Lancaster, for certain improvements in rotary steam-engines.

A. V. Newton, Chancery-lane, for improvements in casting printing types and other raised surfaces, and also in casting the spirats and spaces. (Being a communication.)

W. Clay, Clifton Lodge, Cumberland, engineer, for certain improvements in machinery for rolling iron or other metals, parts of which improvements are applicable to other machinery in which cylinders or rollers are used.

J. Deeley, Newport, Monmouth, engineer, for improvements in ovens and furnaces.

E. Smith, Kentish Town, window-blind manufacturer, for improvements in window-blinds and in springs applicable to window-blinds, doors, and other like purposes.

W. Major, Culcheth, near Leigh, Lancaster, manufacturer, for improvements in looms for weaving certain descriptions of cloths.

J. Cartwright, Sheffield, York, tool maker, for an improved brace for the use of carpenters and others.

J. Clinton, Greek-street, Soho-square, for improvements in flutes.

J. Travis and J. M'Innes, Liverpool, lard refiners, for improvements in packing lard.

W. Curtain, Esq., Retreat-place, Homerton, for certain improvements in the method of manufacturing Brussells tapestry, Turkey, and velvet, or cut pile carpets and velvets, silks, linen, mixed cloths, and rugs of all descriptions, by which method less warp is required, and perfect and regular figures or patterns are produced.

T. Dickins, Middleton, Lancaster, silk manufacturer, for certain improvements in machinery or apparatus for warping and beaming yarns or threads composed of silk or other fibrous materials.

W. Wilkinson, Dudley, Worcester, manufacturer, for certain improvement or improvements in the construction and manufacture of vices.

J. H. S. Wildsmith, City-road, London, experimental chemist, for improvements in the purification of naphtha (called wood spirit and hydrated oxide of Methyte), pyroligneous acid, and eupion, and certain other products of the destructive distillation of wood, peat, and certain other vegetable matters, and of acetate of lime and shale, and in the purification of coal tar and mineral naphtha, likewise spirit the products of fermentation.

C. A. Hohn, King William-street, civil engineer, for improvements in printing.

J. Penn, Greenwich, Kent, engineer, for certain improvements in steam-engines.

P. Armond Le Compte de Fontainemoreau, South-street, Finsbury, London, for certain hygienic apparatus and processes for preventing and curing chronical and other affections, and to prevent or stop certain epidemic diseases. (Being a communication.)

W. Baker, Edgbaston, near Birmingham, civil engineer, and J. Ramsbottom, Longsight, near Manchester, engineer, for improvements in the construction of railway wheels, and in railway turn tables, which latter improvements are applicable to certain shafts or axles driven by steam or other motive power.

W. Riddle, gent., White Friars-street, London, for improvements in the construction of ever-pointed pencils, writing and drawing instruments, and in inkstands or inkholders.

Mc. Lardy and Lewis, Salford, flyer top for preparing spinning cotton, and other fibrous substances.

DESIGNS FOR ARTICLES OF UTILITY REGISTERED.

R. Sargison, Wisbeach, straw-shaking machine, for separating the corn from pulse.
T. A. Jordan, Old-street Road, London, tyre.
S. Barton, Bristol, an open or close carriage with a round cornered glass front.
M. Myers, Birmingham, penholder.
A Grant Brothers, Clements-court, Cheapside, the Beaufort collar.
J. Fenn, Newgate-street, double-headed cylinder wrench.
W. H. Neuber, Long-acre, placard holder.
T. N. Durant, Linfield, Sussex, sound-board receiver for pianofortes.
J. S. Hodge, New Oxford-street, safety pocket or receptacle.
J. Hitchen, Tarporley, Chester, vent-peg.—*Mechanics' Magazine.*

COAL MARKET, LONDON.

PRICE OF COALS PER TON AT THE CLOSE OF THE MARKET.

MONDAY.—Buddle's West Hartley 14 6—Carr's Hartley 14 6—Davison's West Hartley 14 9—Dean's Primrose 14 6—East Adair's Main 13 6—Hasting's Hartley 14 6—New Tanfield 14 3—Ord's Redheugh 13—Ravensworth's West Hartley 14—Smith's Pontop 13 3—South Pontop 13 3—Tanfield Moor 15 6—Tanfield Moor Butes 14 6—Townley 14—Walker's Primrose 12 9—Wylam 13—Wall's End Brown's Gas 13 9—Clarke 14 6—Clennell 14 6—Gosforth 16—Hedley 16—Hedworth 14 6—Killingworth 15 9—South Killingworth 13—Wharncliffe 16—Aden Main 16 9 to 17—Lambton Primrose 16 9—Belmont 17—Hetton 18—East Hetton 16—Lambton 17 6—Russell's Hetton 17 6—Stewart's 18 to 18 3—Caradoc 17—Kelloe 17—Denison 16 6—St. Helen's Tees 15 6—South Durham 16—Tees 17 6—West Cornforth 16—Cowpen Hartley 14 6—Derwentwater Hartley 14 6—Halbearth Splint 13 6—Howard's West Hartley Netherton 14 9—Sidney's Hartley 14 6.—Ships at market, 195; sold, 84.

WEDNESDAY.—Buddle's West Hartley 14 6—Carr's Hartley 14 6—Davison's West Hartley 15—Dean's Primrose 14 6—East Adair's Main 13 6—Hasting's Hartley 14 6—New Tanfield 14 3—Ord's Redheugh 13—Smith's Pontop 13 3—South Pontop 13 3—Tanfield Moor 15 6—Tanfield Moor Butes 14 3—Townley 14—Wylam 14—West Hartley 15—Wall's End Brown's Gas 13 3—Clark 15—Clennell 15—Elm Park 16 6—Gosforth 16 6—Hedworth 14 6—Hotspur 16 3—Killingworth 16 3—South Killingworth 13—Washington 15 3—Eden Main 17 6—Lambton's Primrose 17 3—Belmont 17 9—Braddyll's Hetton 17 9—East Hetton 17—Lyon's 17 3—Hetton 18 6—Haswell 18 9—Jonassohn's 15 9—Lambton 18—Russell's Hetton 18—Stewart's 18 6—Whitwell 17 6—Heugh Hall 16 9—Hudson's Harilepool 17 3—Kelloe 17 6—South Kelloe 16 6—Adelaide Tees 17 6—Seymour Tees 17 9—South Durham 16 9—Tees 18—West Cornforth 16 6—West Tees 16—Cowpen Hartley 14 6—Derwentwater Hartley 14 6—Hartley 14—Howard's West Hartley Netherton 14 6—Powell's Duffryn Steam 20—Sidney's Hartley 14 6.—Ships at market, 180.

FRIDAY.—Buddle's West Hartley 14 9—Carr's Hartley 14 9—Davison's West Hartley 15—Dean's Primrose 15—East Adair's Main 13 6—Hasting's Hartley 14 9—Holywell Main 15 6—New Tanfield 14—Original Tanfield 14—Ord's Redheugh 14—Ravensworth's West Hartley 14 6—Smith's Pontop 13 3—Tanfield Moor 15—Townley 14 6—Walker's Primrose 13 6—Wylam 14—West Hartley 15—Wall's End Bell and Brown 18—Clark and Co. 15 6—Clennell 15 6—Gosforth 18—Hedley 18—Hedworth 16—South Killingworth 13—Eden Main 18 9—Belmont 19—Braddyll's Hetton 19—East Hetton 18—Lyon 18 9—Hetton 19 6—Haswell 19 9—Keepier 19—Lambton 19—Morrison 18—Russell's Hetton 19 3 Stewart's 19 6—Benson's 18—Caradoc 19—Cassop 18 6—Heugh Hall 18 6—Hudson's Hartlepool 17 9—Kelloe 19—South Kelloe 18—Trimdon 18 3—Adelaide Tees 18 6—Seymour Tees 18—South Durham 18—Tees 19—Whitworth 16—Cowpen Hartley 14 9—Derwentwater Hartley 14 9—Hartley 14 6—Howard's West Hartley Netherton 14 9—Sidney's Hartley 14 9—Killingworth 17.—Ships at market, 151; sold, 103.

CURRENT PRICE OF GOLD AND SILVER.

Foreign gold, in bars	per oz.	£3	17	9	New dollars ..... per oz.	£0	4 9½
,, Portugal pieces....		0	0	0	Silver in bars (standard)	0	4 11½

EMIGRATION FACILITATED.—Those persons who expect

their friends in AUSTRALIA to assist them in their OUTFIT, might write to them to pay the money into the hands of S. W. SILVER & CO.'S AGENTS in AUSTRALIA, or to their connections in the district, who would be named on application to S. W. SILVER and CO., in LONDON. The agent's acknowledgment would be received by S. W. SILVER and CO., as CASH at the exchange of the day, for the OUTFIT. This proposal will be also communicated through the COLONIAL JOURNALS. EMIGRANTS' fitting-out warehouse at No. 4, Bishopsgate-street (opposite the London Tavern) where colonial information may be obtained, and small parcels received and forwarded to the colonies.

N.B.—CADETS to INDIA, and CABIN PASSENGERS generally to all parts of the globe (with experienced Female Managers in the Department for Ladies), fitted out as heretofore at 66 & 67, Cornhill, by S. W. SILVER & CO., OUTFITTERS, CLOTHIERS FOR HOME USE, and CONTRACTORS; and at St. George's-crescent, LIVERPOOL.

NATIONAL GAS BURNER.—After 18 months' trial, accom-

panied, in many instances, by severe tests, the result of which has elicited unqualified approbation, the NATIONAL ECONOMIC GAS BURNER stands pre-eminent.

Testimonial from Samuel Clegg, Esq., Consulting Gas Engineer.

I hereby certify, that I have examined the National Economic Gas Burners of Messrs. Paul and Co., London, and find the consumption per hour of cubic feet of gas, at a pressure of 5-10th of an inch to be respectively—No. 0, 4 feet; No. 1, 6 feet; and No. 2, 10 ft.; at the same time the illuminating power is very great, the light remarkably steady, with freedom from smoke or smell of gas, with great purity of light; and, in my opinion, they are decidedly the best patent gas burners in use. SAMUEL CLEGG.

London, Nov. 9, 1848.

May be seen burning, and can be tested by an experimental meter, at the office of PAUL & CO., Gas Engineers and General Gas Fitters, No. 43, Skinner-street, Snow-hill, London.—A detailed Description and Diagram, with Testimonials at length, forwarded, post-free, on application.

PATENT MINERAL PAINT.—After three years' trial on the

sides and bottoms of iron and timber-built ships, this PAINT has proved itself equal to copper as a protection from vegetation, as well as the sea-worm and all other adhesive matter. It is also peculiarly adapted for spouts and gutters, iron railing, felt or wooden roofs, tarpaulings, damp walls, or any other surface that requires to be made waterproof at a small cost, and is ready for use, in casks of 2 to 20 gallons.

Brilliant black, 2s. per gallon—Rich brown, 2s. 9s. per gallon.

EMERSON'S PATENT LIQUID CEMENT.—This valuable and economic PAINT is so adhesive, that it will cling to any surface—brick, Roman cement, and all other plastered work; and, being a rich cream colour, is more pleasing and natural in appearance than oil, and at an *eighth* of the *cost*. It is ready for use, will dry in a few hours, and possesses the property of protecting the walls as well as Roman cement. Sold in casks of 1 cwt. 2 cwts., and 3 cwts., at 8s., 15s., and 21s. per cask. GEO. LEAR & CO., Sole Agents, 16, Basing-lane, Cheapside.

PATENT ALKALI COMPANY'S IRON PAINT.—This

PAINT is the PRODUCT of a PATENT PROCESS, and possesses PECULIAR and VALUABLE PROPERTIES, not otherwise attainable.

Its colour (as at present produced) is a rich *purple-brown*. It is perfectly free from the deleterious qualities of white lead.

It surpasses all other paints ever yet discovered, in point of *durability* and *economy*. Two coats of this paint are more than equal to three of any other description.

From its chemical composition, it is pre-eminently adapted for covering *iron*; also *wood*, and *stuccoed*, or *brick buildings*. The process by which the base of this paint is produced, makes it impossible that any change should take place in its composition from atmospheric influence. Its identity with iron secures it from galvanic action, so fatal to the durability of lead and other paints on iron work.

It has been exposed on shipping to the action of sea-water, and of the sulphuretted hydrogen, so prevalent in sea-ports and tidal harbours, for more than three years, without change.

Its *cheapness* and *strength* render it peculiarly suitable for *iron bridges*, *roofs*, and *railings*, *farm buildings*, and *shipping*. It will also cover creosoted timber.

Price, by the ton, £25, delivered in London, exclusive of packages.

Agents will be appointed for the principal towns in the United Kingdom; in the mean time, orders may be addressed to the offices of the company, No. 20, Fenchurch-street, London. JOHN A. WEST, Secretary.

NEUBER'S IMPROVED LIQUID GLUE is IMPERVIOUS

to DAMP or HEAT, without smell, and equal, if not superior, in strength to any other glue. It is used as a cement for iron, wood, stone, marble, ivory, glass, china and earthenware, plaster models, for every description of fancy work, and for household purposes. It may be used at a moment's notice, and requires no preparation.—Price, dark, 8s.; pale, 10s. per gallon; and in bottles at 6d., 1s., and 1s. 6d.

NEUBER'S IMPROVED WATER VARNISH is without smell, perfectly washable, produces an elegant and durable polish, and requires no preparation of size.—Price, full body, 10s.; flat, 8s., per gallon; and in bottles at 6d., 1s., and 1s. 6d.

Sold, wholesale and retail, by Messrs. NEUBER & WATSON, Varnish and Japan Manufacturers, 4, Endell-street, Broad-street, Holborn, where samples may be obtained, or forwarded free on receipt of 12 postage stamps.—Retail warehouse, 76, Long-acre, two doors from Drury-lane.

N.B. Respectable local agents are required for the sale of those articles in the provinces.

DESICCATING OR DRYING PROCESS (DAVISON

and SYMINGTON'S PATENT).—TO MANUFACTURERS and OTHERS requiring DRYING POWER.—This PROCESS has been pronounced by those who have adopted it nearly three years, as "surpassing every thing before seen or tried for efficiency, purity, cleanliness, cheapness, expedition," and, it may be added—safety. It has already been applied to no less than 15 distinct branches of trade, with equal and most perfect success, from the drying of the thinnest paper, or the most delicate fabric, to the roasting of coffee, and such like substances; in other words, generating a continuous controllable temperature, varying from that of the atmosphere to 500° and 600°, if required, and attended with many important advantages not obtainable by hot flues, cockles, steam, hot-water pipes, &c.—For licenses, and other particulars, apply at the offices of the Patent Desiccating Company, 41, Gracechurch-street, City. ANGUS JENNINGS, Secretary.

PROFESSIONAL LIFE ASSURANCE COMPANY,

Connecting the Clerical, Legal, Military, Naval, and Medical professions, and holding out advantages to the public not hitherto offered by any similar institution

Incorporated.—Capital £250,000.

Established upon the mixed, mutual, and proprietary principle.

Rates essentially moderate.—Every description of policy granted. Immediate, survivorship, and deferred annuities; and endowments to widows, children, and others.—Every policy (except only in cases of personation) indisputable.—The assured permitted to go to and reside in Canada, Nova Scotia, New Brunswick, Australasia, Madeira, Cape of Good Hope, and Prince Edward's Island, without additional premium.—Medical men remunerated for their reports.—Loans granted on real or personal security.—One-tenth of the entire profits appropriated for the relief of the assured while living, and of his widow and orphans.—Annuities granted in the event of blindness, insanity, paralysis, accidents, and any other bodily or mental affliction, disabling the parties.—Persons of every class and degree admitted to all the advantages of the corporation.—Rates for assuring £100 at the age of 25, 35, 45, and 55, respectively—namely, £1 14s. 6d., £2 5s. 6d., £3 4s. 3d., and £4 18s. 6d.

Prospectuses, with full details, may be had at the office.—Applications requested from parties desirous of becoming agents. EDWARD BAYLIS, Actuary and Secretary.

Offices, 76, Cheapside, London.

SIR WILLIAM BURNETT'S PATENT DISINFECTING

FLUID, FOR THE DISINFECTION OF SICK-ROOMS, CLOTHING, LINEN, &c

THE PREVENTION OF CONTAGION.

THE PRESERVATION OF ANIMAL MATTER FROM PUTRESCENCE.

THE PURIFICATION OF BILGE-WATER, CESSPOOLS, DRAINS, AND WATERCLOSETS, &c.

As a DEODORISING and PURIFYING AGENT it is the BEST, the CHEAPEST, and the MOST HEALTHFUL.—See Third Report of Metropolitan Sanitary Commissioners to the Queen, dated July 13, 1848:—"The operation [of cleansing cesspools by Sir Wm. Burnett's fluid] has now been performed in more than a THOUSAND instances, in every part of the metropolis, without, so far as we have been able to ascertain, any complaint as to the nature of the process, or of its being followed by any injurious consequences; on the contrary, there is positive and decisive evidence of more direct and immediate effects in the diminution of disease."

* * * *

IT DOES NOT STAIN the most delicate fabrics—an advantage possessed by no other preparation offered to the public for similar purposes.—Prepared solely at

SIR W. BURNETT'S FACTORY, MILLWALL, POPLAR.

Sold at the office, 53, King William-street, London-bridge; and by chemists, shipping agents, and others, in every town in the United Kingdom.

In imperial quart bottles, price 3s., bottle included.

*** The only genuine disinfecting Fluid is sealed over the cork with the inscription "SIR WILLIAM BURNETT'S PATENT DISINFECTING FLUID," and secured outside the wrapper by an engraved label, with a similar inscription, and address of patentee.

RAILWAY AND OTHER IMPORTANT RECORDS,

EFFECTUALLY PROTECTED FROM DAMP AND VERMIN.

Extract from the Appendix to the Second Report of the Commissioners on the Fine Arts.

"In 1839, I superintended the construction of a house, of three stories, on the Lac d'Enghein. The foundation of the building is constantly in water, about 19½ inches below the level of the ground floor. The entire horizontal surface of the external and internal walls was covered at the level of the internal ground floor with a layer of

SEYSSEL ASPHALTE,*

less than half an inch thick, over which coarse sand was spread. Since the above date, no trace of damp has shown itself round the walls of the lower story, which are, for the most part, painted in oil, of a grey stone colour. It is well known that the least moisture produces round spots, darker or lighter, on walls so painted. Yet the pavement of the floor, resting on the soil itself, is only about 2½ inches above the external surface of the soil, and only 19½, at the utmost, above that of the sheet of water. The layer of asphalte having been broken and removed, for the purpose of inserting the sills of two doors, spots, indicating the presence of damp, have been since remarked at the base of the door-posts.

The DIRECTORS of the SEYSSEL ASPHALTE COMPANY have much pleasure in recommending to the notice of ENGINEERS and ARCHITECTS the application of the ASPHALTE of SEYSSEL, as the *only effectual* mode of preventing damp in basement floors, and water from percolating through the ARCHES of a VIADUCT.

The arrangements of this company enable works of any extent to be executed with the greatest promptitude. I. FARRELL, Secretary.

SEYSSEL ASPHALTE DEPOT, STANGATE, LONDON.

ESTABLISHED 1838.

* This method has been adopted at the New Houses of Parliament.

CURE OF FOURTEEN YEARS' COUGH THIS MONTH,

by Dr. LOCOCK'S PULMONIC WAFERS.—"Nov. 5, 1847.—I, Thomas Carter, Egremont, Cheshire, had a cough for 14 years; nothing ever gave me relief until I commenced taking Dr. Locock's Pulmonic Wafers—three boxes of which have entirely cured me.—Witness, Geo. H. Howell, chemist, Dale-street, Liverpool."—Dr. Locock's Wafers give instant relief, and a rapid cure of asthma, coughs, and all disorders of the breath and lungs.—To singers and public speakers they are invaluable, for clearing and strengthening the voice; they have a most pleasant taste.—Price 1s. 1½d., 2s. 9d., and 11s. per box.

Agents: Da Silva & Co., 1, Bride-lane, Fleet-st., London; sold by all medicine vendors.

Under the sanction and patronage of His Royal Highness PRINCE ALBERT, Lord-Warden of the Stannaries, Chief Steward of the Duchy of Cornwall and Devon, &c.

Will be published on the 22d of January, 1849, price 6s.,

THE MINING ALMANACK FOR 1849: being a Yearly Com-

pendium of Information on General Science; with Statistical Details relating to the Mining Interests of Great Britain. Compiled and arranged by HENRY ENGLISH, Mining Engineer, Editor of the *Mining Journal*, &c.—This work will contain, in addition to Commercial Intelligence with important Statistical and Tabular Matter—Parliamentary and Official Returns from the Mining Districts, made up to the 31st December, 1848—Original Papers on Geology, Mineralogy, Metallurgy, Practical Mining, Engineering, and Mechanics—Abstracts of the Statutes affecting Joint-Stock Companies—A comprehensive Treatise on the Cost-Book System and the Stannaries Courts—Rules applicable to the working of Mines and Collieries—Lists of Members of Scientific Bodies—and other valuable information connected with the various branches of science.

Communications to be addressed to Mr. English, 25, Fleet-steeet, London.—Published at the office of the *Mining Journal, Railway and Commercial Gazette*, 26, Fleet-street.

On the 1st January, 1849, will be published, by W. Strange, 21, Paternoster-row, London, and may be had of all booksellers, No. I., price 6d., of

A CALL TO PREPARE FOR A NEW AND PERFECT

ORGANISATION OF HUMAN SOCIETY, in order to realise the precepts of God and genuine Christianity: or, in other words, REAL CIVILISATION, and so ensure full and profitable employment for the superabundant labour and talent of the world.

ENLARGEMENT OF THE "WEEKLY DISPATCH."—

This JOURNAL, which is unrivalled, will be ENLARGED, on and after Sunday, the 7th January, 1849, to SIXTEEN PAGES, containing 64 columns, of the same size and form as at present, without any extra charge. The *Dispatch* will, therefore, answer the purpose of four newspapers. An edition of the *Dispatch* is published at Five o'clock every Saturday morning, for transmission by the first train and morning mails, so that persons residing in towns 250 miles from London may receive it the same evening. An express edition of the *Dispatch* is published every Sunday afternoon, containing news *direct* from Paris, and other parts of the continent, up to Eight o'Clock on Saturday evening.—Orders should be given early to Mr. Richard Wood, 139, Fleet-street, or to any of the newsvenders, in town and country.

TO CONSUMERS OF GAS.—The PATENT GAS-LIGHT

MONITOR—ADAPTED to EVERY DESCRIPTION of BURNER, and SUPPLIED at a COST placing it within the REACH of EVERY CONSUMER—regulates the flame of gas-lights to any required height—economising the consumption, and preventing the danger and inconvenience arising from the flaring of lights.

PATENTEE'S OFFICE, 20, KING-WILLIAM-STREET, CHARING-CROSS.

THE PATENT OFFICE AND DESIGNS REGISTRY,

No. 210, STRAND, LONDON.

INVENTORS will receive (gratis), on application, the OFFICIAL CIRCULAR OF INFORMATION, detailing the eligible course for PROTECTION of INVENTIONS and DESIGNS, with Reduced Scale of Fees.

Messrs. F. W. CAMPIN and CO. offer their services, and the benefit of many years' experience, in SECURING PATENTS and REGISTRATIONS OF DESIGNS, with due regard to VALIDITY, economy, and dispatch—assisted by scientific men of repute.

Also, in MECHANICAL and ENGINEERING DRAWINGS, whether connected with Patents, Railways, or otherwise, by a staff of first-rate draftsmen.

Application personally, or by letter, to F. W. Campin and Co., No. 210, Strand (corner of Essex-street).

ON NERVOUS DEBILITY AND GENERATIVE DISEASES.

Just published, the thirty-fifth thousand, an improved edition, revised and corrected, 120 pages, price 2s., in a sealed envelope, or forwarded, post-paid, by the Authors, to any address, secure from observation, for 2s. 6d., in postage stamps, illustrated with numerous anatomical coloured engravings, &c.

MANHOOD: the CAUSES of its PREMATURE DECLINE,

with plain directions for its perfect restoration. A Medical Essay on those diseases of the Generative Organs, emanating from solitary and sedentary habits, indiscriminate excesses, the effects of climate, and infection, &c., addressed to the sufferer in youth, manhood, and old age; with practical remarks on marriage, the treatment and cure of nervous and mental debility, impotency, syphilis, and other urino genital diseases, by which even the most shattered constitution may be restored, and reach the full period of life allotted to man. The whole illustrated with numerous anatomical engravings on steel, in colour, explaining the various functions, secretions, and structures of the reproductive organs in health and disease; with instructions for private correspondence, cases, &c.—By J. L. CURTIS & CO., consulting surgeons, 7, Frith-street, Soho-sq., London.

REVIEWS OF THE WORK.

We feel no hesitation in saying, that there is no member of society by whom the book will not be found useful—whether such person hold the relation of a parent, preceptor, or a clergyman.—*Sun*, Evening Paper.

J. L. Curtis, *On Manhood, and the Causes of its Premature Decline; with Plain Directions for its Perfect Restoration.*—[Strange, Paternoster-row.]—This is a book replete with valuable advice and information. It developes the fearful shoals on which a large proportion of human happiness is wrecked, and furnishes a chart by which they may be avoided and escaped. Fortunate for a country would it be, did its youth put into practice the philanthropic and scientific maxims here laid down. One cause of matrimonial misery might then be banished from our land, and the race of the enervate be succeeded by a renewal of the hardy vigorous spirits of the olden time.—*United Kingdom Magazine.*

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London: Printed by RICHARD MIDDLETON, and published by HENRY ENGLISH (the proprietors), at their offices, No. 26, FLEET-STREET, where all communications are requested to be addressed. [*December* 23, 1848.